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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

WHAT THIS COLLEGE DOES FOR YOUNG PEOPLE.

BY PRES. GEO. T. FAIRCHILD.

THE course of study at the Kansas State Agricultural College is planned to give the young people of the State, free of tuition, a genuine education in connection with general and special training for the industries of the people. It takes youth direct from the common schools, but mature in energy, to give four years, or less if desired, to mastery of self for life's uses. It may also lay the foundation for a trade or a business. But it does a great deal more. What it does may be thought of under various objects secured.

First, it gives direct and accurate knowledge.

The studies of such a course present true pictures of nature. Botany is a study, not merely about the millions of plants growing near us and even upon us, but of the plants as they can be seen and handled. Chemistry takes students into experience of the elementary substances which in numberless combinations make the solid things about us, and even decides the constituents of living bodies. Physiology presents the parts of living beings in their relation to each other as organs, and explains their uses. It underlies the laws of health, strength, and growth, as well as a knowledge of diseases. Zoology compares men and all animals in their many relations to each other and to the rest of the universe. Entomology and Veterinary Science take special views of the insects that annoy or serve us, and of the domestic animals we use and pet. Agriculture, Horticulture, and Floriculture present the known truth as to cultivation of the soil on the home farm, the home garden, the home orchard, the home yard, as well as the ranch and the public park.

It gives special means for study of human nature, in our mother tongue, in history of our nation and of all nations, in literature of English-speaking people, in mental and moral science as men study each others' abilities and needs, and in the principles of true thinking and true persuasion.

It gives a foundation for safe citizenship, in the principles of constitutional government, and genuine political economy, without partisanship or confusion of tongues.

To do this work the College has an excellent equipment in the best of teachers, specialists, well-furnished classrooms, laboratories filled with good apparatus, museums and libraries, carefully arranged shops and experimental grounds second to none. Chief of all, it has such natural methods of training as bring out the best energies of students.

Second, this College develops natural abilities to the best advantage.

In addition to the growth given by an ordinary education, it furnishes means for actual scientific manipulation and investigation, so that a student becomes able to carry forward his studies by himself. His after progress is not dependent upon teachers so much, because he has learned how to use the tools of a student. Training in the shops, on the farm, and in the gardens and greenhouses fits him to use strength and judgment to profit at once, and gives genuine confidence in abilities. This also fits for a true choice of occupation, when school days are ended.

These statements are proved by the testimony of thousands who have tried the course of study in part or in whole during the past fifteen years. The special success of graduates in general work and special business, in both arts and sciences, is evident. The repute of the Institution, felt all over the country, has been established by its graduates.

Third, the College builds sound character in its students.

The hearty earnestness of the body of students, grown up men and women often, is noticeable to visitors. The average age is nearly twenty years, and nearly all are sons and daughters of the earnest working people of the world. Seventy per cent are from farm homes, and bring their sterling character with them. The vigorous constitution and the uniform good health of the students help to maintain a wholesome life and frank, straightforward, outspoken sentiments. The absence of large dormitories makes intelligent association natural and easy, and adds to the interest of literary societies for improvement and debate. Wholesome influences in a quiet city, free from serious social evils, and full of churches, surround all, and encourage honest and upright life. Best of all, the natural exertion of each for usefulness gives the best possible conditions for developing philanthropy. Every student wants to do something for his College, his State, his country, and his fellow men.

These considerations make this State Institution, built and equipped for the use of our young people free of charge, worthy the study of parents and children. How can people throw away the chances given by these hundreds of thousands of dollars' worth of the best apparatus for making useful, influential men and women out of our boys and girls?

THE COLLEGE AT THE WORLD'S FAIR.

BY PRES. GEO. T. FAIRCHILD.

WHILE the exhibits made by the Kansas State Agricultural College at the Columbian Exposition are not pretentious among the thousands of displays that attract visitors, they are well spoken of by all who take pains to look them over. One experienced judge of such exhibits, who has been at six world's fairs pronounces ours "one of the finest exhibits of its kind she has ever seen. It most nearly meets her ideal of a perfect school exhibit."

Without claiming pre-eminence for these exhibits, a Kansan may be interested in a brief synopsis of what they present in the three different places they occupy.

In the Kansas Building, to the right of the main entrance, two prominent cases, each ten feet square on the floor, contain a general exhibit of the work in all departments where students' work is available, or where the results of experiment have general interest. Specimens of wood and iron work, of cooking and sewing, of printing and drawing, are arranged in various ways, and collections of insects and of plants show some of the methods of study. Many frames show varieties of grains tested in the Experiment Station, displayed very satisfactorily between glass plates and in tubes. Bottles of beans, peas, and corn serve a similar purpose, and a case of Japanese soy beans gives "stalks and all" for this new forage crop. One chart shows distinctly the attendance at College from all the counties of Kansas, and another gives the location of the eighty or a hundred Farmers' Institutes held by the College during the past ten years. Numerous photographs, more than two hundred, show every phase of the College work and life, as well as the beautiful grounds and commodious buildings. A clear presentation of the course of study as represented in each department gives to the expert an idea of its characteristic development.

In the general educational exhibit for Kansas, occupying space in the gallery of the Liberal Arts Building, this College has a display of educational character solely, more exactly descriptive of system and method than that in the Kansas Building. An exact presentation of the relative importance of each department of instruction in the general scheme is given by wall charts with photographs attached. Samples of the work in the industrial training of all sorts, and of the problems solved there, as well as collections in natural history, give tests of accomplishment, while volumes of drawings show the exact results of training at each stage of progress. Four albums filled with photographs give to one who studies them a full presentation of the place, its buildings, apparatus, Faculty and students, as well as its surroundings in city and country. Complete sets of the catalogues, the biennial reports, and the INDUSTRIALIST, neatly bound, are there for consultation. The Columbian History of the College prepared by Prof. Walters and the Annual Catalogue for 1892-3 are ready for distribution to all specially interested visitors.

In the Agricultural Building, this College has no small share in the general exhibit of Kansas, though no effort has been made to distinguish the specimens of grains and forage plants furnished by the College. There is, however, in the same building an admirable exhibit of the Agricultural Colleges and Experiment Stations of the United States, prepared under the auspices of the American Association. In that exhibit our Kansas College has a prominent part. The horticultural department of the Stations was under the direction of our Professor Popenoe, and shows especially our Station work in varieties of grapes and of peas, and the grape exhibit is as good in its line as anything shown. The women's work in these Colleges was collected and put under Mrs. Kedzie's direction, and gives a natural prominence to our departments of cooking and sewing, as leaders in these lines of training. Other departments, Chemical, Agricultural, Veterinary, and Botanical especially, have contributed to this interesting exhibit, and general views of buildings, Faculty, and students are displayed.

Magic lantern views of this College's work have been chosen for illustrating lectures upon agricultural education by the United States Department of Agriculture.

ure, and sets of its publications are filed for reference in the exhibit.

The United States Commissioner of Education gives in his exhibit in the Government building, a fair place to this College for its publications and photographic views; but in the mass of exhibits, few Kansans stop to find these acquaintances. The same building contains work of graduates of this College in the division of entomology and vegetable pathology, both of which attract attention by their excellent arrangement.

The Horticultural Building will next month receive an exhibit of Kansas fruit, among which will be found a beautiful show of varieties of grapes grown this season in our own Experiment Station. Kansas will be proud to claim relationship to their College in this.

In closing, it is proper to note that this College has presented at the Columbian Exposition its work, and not its collections or apparatus. Nothing has been taken from the working facilities of the College for the display. Every class-room, laboratory, cabinet, museum, and shop is in perfect order at the College, and will be but slightly enriched when the matter shown at Chicago is returned. Many institutions have presented an extensive array of their apparatus and collections, depriving themselves of their use for a year, but from the Kansas Agricultural College, a single case borrowed from the mineralogical museum represents the only article of this kind.

Individual Responsibility.

Things have changed materially of late years in the industrial world, and sometimes I think in the political world. This is an age of combination, of great organization. The individual capitalist is disappearing in the corporation. The individual laborer is disappearing in the trades union. The power of the machine in politics is recognized of all men. Now, I do not call attention to these tendencies to quarrel with them, but rather to emphasize the spirit that is needful to make them wholesome. The capacity to organize and to combine is itself indicative of a high grade of intelligence and of power. We may reasonably expect from society triumphs greater than the past has ever seen as a result of these tendencies, if we can strip them of their dangers and reap only their benefits. If these various combinations can be kept open channels for the opportunity for character and for capacity, the triumphs of the past will surely be repeated in the future; but if corporation and trades union and political party, instead of being the schools of individuality, become the cause of its extinction, then indeed the danger is great and serious.

In this country the battle of political liberty has been fought and won. Politically, the humblest citizen of the United States is the equal of our President. It yet remains to achieve in the industrial world the same triumph, to animate the world of industry and of commerce with the power of the same glad recognition of the value of a man. This is not to be done by insisting so much upon the rights of men; it is rather to be done by emphasizing the duties which men have here. The real foe is selfishness, and he tyrannizes over men of every class. The duty of the strong is to care for the weak. The duty of a man is to set more store by the life of the humblest of his brethren than by his own profit and his own comfort. These are the thoughts and such as these in whose power progress is to be made if the great declaration is to continue its triumphs in coming time.

I know that the Declaration of Independence was a declaration of rights; but it was a declaration made by men who understood that every right carries its corresponding duty. There is in Athens a beautiful statue known as the Wingless Victory. The figure is chiseled without wings, and is stooping down to unloose her sandals, as though when Victory had reached the city of Athens, Victory had found at last her permanent home. I would that enshrined in every hamlet of this Republic there might be a Wingless Victory—not a victory that betokens a triumph in arms, unless, indeed, our people are called to battle as in the past for the rights of all humanity; but I would have that statue typify rather those victories of peace that are no less renowned than war; that victory, most of all, which shall be the fitting symbol of a people competent to govern themselves because each one is master of himself; that victory of which the Scripture speaks when it says that "he that ruleth his own spirit is greater than he that taketh a city."—President Seth Low.

Humanity and Profit in the Care of Stock.

Every man owes a duty to the live stock which he owns. Having taken them from natural conditions and subjected them to his will, it is his obvious duty to see that this subjection does not involve unnecessary suffering. It necessarily involves at times some suffering. We restrain our live stock even though the restraint involves alarm, fretfulness, and more or less present discomfort. We dehorn our cattle because the good of the herd demands it. We castrate and spay because these operations, while involving immediate suffering, bring ultimate profit. While all this is true, it will be found that the greatest humanity to live stock and adequate provision for their comfort brings the greatest profit. It seems horrible

in range times to have the owners of herds sit down by a comfortable fire and calculate the percentage of loss on their cattle or sheep during the winter storms, and figure that it was cheaper to allow the poor brutes to be frozen to death than provide hay to tide over a blizzard. This was cold-blooded inhumanity. In the same way farmers will sit down and figure on the cost of groves and shelters, and conclude that the cost of providing these is greater than the loss in condition of their live stock exposed to the wintry blasts. These calculations, however, in which the pocket book is hard while the conscience is silent, are nearly always misleading. Even men with no conscience to speak of are discovering that humanity and profit are closely allied, and that nature takes revenge on the man who has no sympathy for the suffering of live stock. When the peevish old prophet was complaining that he had been made ridiculous by the failure to destroy Ninevah, he received a stinging rebuke to the effect that there were thousands of little babies that had claims on the divine compassion beyond any claim made by a preacher's reputation, and "also much cattle." If the Ruler of the Universe has compassion upon dumb brutes, he is a very hard-hearted farmer who does not heed the voice of humanity in dealing with the live stock from which he expects to obtain the means of existence, and of sustaining his reputation as an honest man. The voice of humanity is always a better adviser than the pocketbook. The one appeals to the better elements of human nature; the other appeals to the greed and avarice. The man who would treat his live stock as he would wish to be treated were he in their place, will always find them more profitable to him than if he sits down coolly to calculate how many dollars and how much time it will require to make them quite comfortable. The man who listens to the things which appeal to his better nature always does wiser things than he who stifles the conscience, and in the end reaps far greater profit.—Live Stock Indicator.

Common Advice.

We often come across the following well-meant but not very well-considered advice: "Try and keep the brightest of the boys on the farm. It will afford plenty of exercise for his brain and for all of the knowledge he can accumulate." The latter sentence is undoubtedly true enough, but is the first always sound? We think not. Every boy, bright or dull, has his destiny to fill. He may not at first strike out on the right track, but sooner or later he must drift into it, and if it is not to be on the farm, the more inducements you hold out to keep him there the longer will he be in finding it. He may be ever so bright, and yet not suited to be a farmer. Farmers as well as poets are born to their calling. There is some one thing a boy can do better than anything else, and he will not be content until he finds his place. Woe to the man that is out of place, whether it be what is called a high or a low one; and we believe that if he does not pursue the calling for which he is suited in life, he must begin to work out his destiny in another—for no one else can do his task or act as a substitute in his place. Find out the bent of your boy if you can, and smooth the way before him. Don't make a drudge of him for the sake of keeping him on the farm.—Mirror and Farmer.

Self-Support at College.

The instances in which a girl has succeeded in entirely supporting herself are very rare, writes Anna Robertson Brown in the second article of the series on "The Girl Who Goes to College" in the August Ladies' Home Journal. I think she ought not to try to. A college course, just as it stands, is enough for any girl, however strong, to attempt to carry. Extra calls on her strength are very apt to make her break down. Most colleges offer scholarships, awarded by faculty option, by competitive examination or by the giver, but they are, of course, too limited in number to be generally available. But there are several ways in which a girl may provide for part of her expenses. She may borrow money, with the understanding that it is to be repaid from the salary received in teaching after graduation; and some girls study and teach alternate years. Tutoring and prizes for scholarship may be made to help, and reading or writing by the hour, copying, mending, office-work, cataloguing, drawing and other technical work for the scientific departments, library-work, and assistance in the laboratories; but such work is often at a serious risk to scholarship or health, or both.

Keep Your Nerve, Trust Your Bank.

There are in the neighborhood of three thousand, eight hundred National banks in this country. That is, for every one that has closed its doors this year there are thirty-six or thirty-eight in full operation, and this number will be increased rather than decreased. Large as the number of suspended banks is, it is but a small proportion of the aggregate which are in existence, and which are as strong as they ever were in the past. No depositor has lost a cent this year by the suspension of any bank. No bank, except perhaps half a dozen or a dozen which were managed by dishonest or incompetent men, would have failed this year if its depositors had the business sagacity and level-headedness to avoid runs on them for money which they did not want to use. Ninety-nine out of every hundred of the banks left in the country are in a solid and safe condition, and will weather this storm successfully despite the accidents and mischance to which they are exposed.—St. Louis Globe-Democrat.

FARM NOTES FROM VARIOUS SOURCES.

A man or an animal will tire of any one food when compelled to live on it exclusively for any length of time.

Farmers should be just as regular in eating, sleeping, and beginning and quitting work as any other class.

Hogs can now be made to reach the weights at one year old that were attained at eighteen months half a century ago.

A man's got to have a layer of country experience somewhere in him. Sooner or later a man rots if he lives too far away from the grass and the trees.—Eugene Field.

Intensive and not extensive farming will be the watchword in the future, and as larger crops are grown on fewer acres, there will be larger net profits.—Country Gentleman.

The management and care of the stock of the farm will decide to a considerable extent its profitability, fully as much so as any other part of the farm work; so that the farm profits depend upon the business management.

By choosing good breeding stock in season a better opportunity is offered for feeding and managing to the best advantage; and in making the most of an investment of this kind, the safest plan is to be ready in good season.—Mirror and Farmer.

The Professor of Agriculture in Clemson College, South Carolina, says that land in Berkeley County, that State, has been much more productive since the big earthquake, due to the fact that the earthquake provided better drainage.—Mirror and Farmer.

Everybody now wants a vacation, and pretty much everybody gets it at some time during the year. The President and the fourth-class postmaster feel the need of it alike. The great railway king and the humblest switchman in his employ both "require a change." All professions and all trades have caught the habit of an annual outing.—Christian Register.

If mixed farming is carried on, the herd should not be so large as to require too large a percentage of land for pasture, but just large enough to fit in with the rotation of crops. This presupposes, of course, that there is no permanent pasture that can be relied on to furnish enough feed for the cows all summer unless unusual seasonal conditions should prevail.—National Stockman.

This is a time for specialties. In every line of business the man who has a good specialty stands the best chance of success. A profitable specialty in the livestock business, and one that is not overdone, is the breeding of high-class dairy cows for family use. In every town and village can be found buyers who are willing to pay exceedingly good prices if they can procure really good cows for home use.—Farmer's Home.

Mr. J. J. Thomas, horticultural editor of the Country Gentleman, claims that plums can be grown at a cost of not more than five cents a tree for the season if the owner will regularly catch the plum's main enemy, the curculio, by the jarring process. He has done it many years. But he will talk and write in vain as regards thousands of growers of plum trees. They would sooner try some quack remedy, such as hanging in the crotch of the trees bottles of sweetened water.

The great need of the majority of our farmers is more manure, yet thousands of tons go to waste every year from improper care. All manure should be liberally mixed with absorbents and kept under cover until you are ready to apply it to the land. In no other way can you prevent the loss of valuable properties. Manure thrown out and left to pile up against the barn, and so catch the drippings from the eaves through the winter, has not very much value by spring. A small lean-to, sufficient to cover and protect it, can be cheaply built, and will more than repay its cost in a single season.—Farmer's Home.

Secretary Morton is reported to have said: "The statistics really show that agriculture is safer than banking, manufacturing, or railroading, taking all things into account. There is no farmer of good sense and good health anywhere in the west," Mr. Morton declares, "who cannot make a good living for himself and family, and that is as well as the majority of men are doing in any pursuit. The man who owns a farm and sticks to it is certain to profit in the future. There is practically no more land to be added to the area of cultivation. The supply of agricultural products has almost reached its limit in the United States, and must now remain stationary, while the demand will go on increasing every year. This implies a gradual improvement in prices and a steady appreciation of the value of farm lands."

Every one who has the care and cleaning of horses realizes the annoyance that comes from wet and dirty animals, resulting from lying down where there is an accumulation of urine and manure upon a tight floor. To remedy this, a very good way is to make the floor of strips instead of plank or cement, as is sometimes the case, and in such a manner as to prevent the escape of urine. We have seen it recommended to use strips of inch board six inches wide, setting them on the edge and keeping a space between each two strips by pieces of lath, so there will be no retaining of water on the floor. Instead of using inch stuff, we would make the strips at least two inches wide, and believe there will then be no obstacle to the free passing off of the urine. The floor will then be kept dry and there will be less danger of a horse lying down in urine, as may be the case on a tight floor with the bedding kicked away.—Germantown Telegraph.

Calender.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

General repairs improve the condition of all buildings.

A few Third-year students will drop out of classes for a year.

Mrs. A. J. Draines, of Deep Creek, has presented the Museum with a white ferret.

The recent rains have added much to the beauty of lawns and value of late gardens.

Dr. Johnson, of Strong City, and Chaplain Biddison, of Marysville, visited the College last week.

The fall term will open Thursday, September 14th. Examinations for admission, Wednesday, September 13th.

Prof. Walters has just prepared plans and specifications for a large addition to the new poor house on College Hill.

The regular meeting of the Board of Regents was held on the 15th, 16th, and 17th. The minutes will be published next week.

Prof. Brown will return from Leavenworth about September 1st, and bring his family. They will occupy the Platt residence on College Hill.

Loan Commissioner Stratford and President Fairchild met in Topeka this week and succeeded in investing all unemployed funds of the College, amounting with promised bonds to over \$70,000.

Wednesday, August 23rd, will go into College history as the day on which ground was broken for Science Hall, the fine new building which will in a few months adorn the campus south of College Hall.

Janitor McCreary is again at his post as well as ever, his face bearing the marks of the surgeon's knife made in extracting the shortened nerve which made life a misery for two years. The scars are cheerfully worn for the sake of health and strength.

The printing office is in its new quarters in the southwest basement of the main building, which the carpenters, masons, and painters have converted into very comfortable rooms. The presses will be driven by an electric motor operated from the central steam plant.

Secretary Waite of the State Board of Charities called at the College one day last week in search of a student for Farm Foreman at the Soldiers' and Orphans' Home at Atchison. Andrew Jackson, Second-year in 1891-2, now a Columbian Guard at the Fair, was chosen.

"My neighbor, Mr. C——, has had two or three sons attend the Kansas State Agricultural College who are very fine men, and have made themselves useful citizens, and I want my son to do the same," is the statement of a citizen of the Cherokee Nation, Indian Territory, in a recent letter.

The Faculty is under obligations to Mr. L. Baldwin, of Great Bend, for an invitation to be present and participate in the great Interstate Irrigation Convention to be held at Salina, on September 28th next. Mr. Baldwin writes that the late meeting at Great Bend was a success, and will be the foundation for much good to western Kansas hereafter.

Prof. and Mrs. Olin mourn the loss of their infant son, Oscar Abbott, who died early Thursday morning of cholera infantum. The blow was harder because of the absence of the father, who did not hear the sad news until his return Thursday afternoon. Funeral services were held at the residence yesterday forenoon, conducted by Rev. Mr. Drake of the Congregational Church, assisted by Pres. Fairchild.

Our old friend, the Kansas Farmer, has adorned its bright pages at various times during the summer with views of the College buildings and words of approval for College work. The Farmer is one of the few first-class agricultural papers upon our table which has not, during these hard times, dropped the pen for the scissors as a means of filling its columns, and its good words are appreciated.

The INDUSTRIALIST begins the new year with a fine new gown of fashionable cut, purchased from the anti-combine type founders, Barnhart Bros. & Spindler. The old dress will be used in the future in the mailing list, thus releasing a large amount of type for the beginners' cases. Considerable new job material is also added, and the Printing Department is better prepared than ever before to meet the needs of students.

The contract for Library Hall was let on the 14th inst. to Ulrich Bros., of Manhattan. Their bid was \$44,570. The woodwork will be done by David Hulse, of Manhattan. Work has begun, and the building will be under roof by the first of January. Friends of the College may feel confident that Messrs. Ulrich will devote their best efforts to the construction of a building which shall be a monument to their integrity and skill.

CLASS HOURS, FALL TERM.

HOURS.	SPECIAL CLASSES.			FIRST YEAR.				
	I. Writing.	U. S. History.	Industrial.	Algebra.	English Anal.	Algebra.	Industrial.	Geometrical Drawing.
II.	Industrial.		Geography.	English.	Algebra.	Industrial.	Geometrical Drawing.	English Analysis.
III.	English.	Arithmetic.		Geometrical Drawing.	Industrial.	Rhetoricals.	English Analysis.	Algebra.
IV.		Industrial.	English.		Geometrical Drawing.	English Anal.	Algebra.	Drill and Rhetoricals.
V.	Arithmetic.	English.	Arithmetic.	Drill and Rhetoricals. Industrial.	Drill and Rhetoricals.	Geometrical Drawing.	Drill and Rhetoricals.	Industrial.

HOURS.	SECOND YEAR.				THIRD YEAR.		FOURTH YEAR.	
	I. Entomology.	Industrial.	Industrial.	Geometry.	Agricultural Chemistry.		Logic.	Industrial.
II.	Chemistry.	Horticulture.	Geometry.	Industrial.	Gen. History.	Trigonometry, Surveying.	Agriculture	Literature.
III.	Chem. Prac. Rhetoricals.	Geometry.	Chemistry.	Horticulture.	Trigonometry, Surveying.	Surveying Prac. Industrial.	Physics.	Psychology.
IV.	Geometry.	Chemistry.	Entomology.	Chem. Prac. Rhetoricals. Drill.	Surveying Prac. Industrial.	Gen. History.	Industrial.	Physics.
V.	Industrial.	Chem. Prac. Rhetoricals.	Chem. Prac. Rhetoricals.	Chemistry.	Surveying Practice. Rhetoricals. Drill.		Rhetoricals.	

GRADUATES AND FORMER STUDENTS.

Ben Skinner, '91, spent a few days at the College this week.

W. E. Whaley, '86, is elected Principal of the Salina high school.

H. A. Darnell, '92, will teach at Pavillion, Wabunsee County.

Minnie Reed, '86, and post-graduate '93, will teach in the Argentine schools.

T. E. Lyon, '93, will this year teach the higher department of the Garrison schools.

May Secrest, '92, is Secretary, and A. D. Rice, '92, Treasurer, of the Riley County Educational Association.

H. W. Jones, '88, has been re-elected Principal of the Alma schools. He will add to the course of study the coming year.

Hannah M. Evans, student in 1890-91, who has taught recently at and in the vicinity of Riley, has a school this year near Denver.

J. W. A. Hartley, '92, employed several months past in the Horticultural Department, will teach the coming year in Wabunsee County.

Maude Parker, Fourth-year, graduated in July from the Kansas Conservatory of Music, having studied under Prof. Brown, President of the institution.

Lieut. J. E. Brady, of Fort Leavenworth, Second-year in 1882-3, called at the College several times in July during a visit to his brother, Arch-deacon Brady of the Episcopal Church.

Lottie Short, '91, has been chosen Instructor in Household Economy at the Storrs Agricultural School, Storrs, Conn. She takes her place in September, after a month at the World's Fair.

F. M. Linscott, '91, and Susie Hall, '93, were married at the residence of the bride's parents, Farmington, Kansas, July 27th, Rev. J. A. Swaney, of Holton, performing the ceremony. The home of Mr. and Mrs. Linscott is Ottawa.

K. C. Davis, '91, spent a month at the College recently in special study of botany and entomology and making collections in both sciences. He has applied for post-graduate work in botany and horticulture. Mr. Davis has been re-elected Principal of the Austin (Minn.) High School, with a substantial increase of salary.

C. W. Earle, '90, and Ione Dewey, '93, were married at the residence of the bride's parents in Manhattan, on August 17th, President Fairchild performing the ceremony. After visiting the World's Fair, the young couple will take up their residence in Denver, where the groom is engaged in the advertising business.

The following graduates will teach the coming year in Riley County: May Secrest, '92, Randolph; Delpha Hoop, '91, Heller; Geo. Smith, '93, Oak Grove; Christine Corlett, '91, Kimble; C. J. Peterson, '93, May Day; S. N. Chaffee, '91, Peach Grove; Callie Conwell, '91, Deep Creek; Ivy F. Harner, '93, Lasita; S. C. Harner, '90, Laurel Hill; W. E. Smith, '93, Blasing; Elizabeth Edwards, '92, Godwin.

The Fairview Enterprise pays the following tribute to the versatility of a member of '91: "Ben Skinner can turn his hand to most any pursuit. He is a first class teacher, and is acknowledged as such by prominent educators in Kansas. He is something of a lawyer, and if necessary he can tell you a great deal about medicine. Last Sabbath he occupied Rev. Treiber's pulpit at the Congregational church very acceptably."

A host of former students find employment for the coming year as teachers in Riley County, the following among others perhaps overlooked: Elsie Crump, Jennie Smith, Flora Allingham, C. E. Abell, Eben Blachly, Winifred Houghton, E. J. Davies, Lottie Finley, Lizzie Crum, J. R. McNinch, Hannah Wetzig, Grace Wells, Ellen Nilson, Lew Hardy, Ross Long, E. L. Wetzig, Maggie Hibner, Myrtle Whaley, Josie Myers, and Emma Jacobs.

Notes From the Gardens.

The dry weather of the first part of August, followed by the recent rains, leaves the gardens and grounds in the finest possible condition. Very few weeds are to be seen, while the lawns are as green as in June, and cabbages and tomato plants equally so.

A collection of 98 varieties of onions, leeks, and garlies forms an interesting subject for study by both the Botanical and Horticultural Departments. A comparison of varieties, with characteristics of each, season of growth, etc., will occupy the attention of the Horticultural Department; while the more purely botanical characteristics will be studied by the Botanical Department with an eye to discovering synonyms and to add to the general knowledge of the botanical world concerning onions and their relatives.

Plums and cherries have been almost a total failure at the College, and apples are not much better.

A single tuber of the variety "Omaha Market," weighing two pounds, was dug July 19th from a lot of potatoes planted March 25th. It was grown from the much-talked-of "second crop seed." The Omaha Market, during the last two years, has proved to be one of the best, if not the best, of the 300 odd varieties grown at the College.

Notwithstanding the fact that the peach trees were not laid down last winter, there was a fair setting of fruit on the trees of the old plantation; and, in spite of the rather too close attention of people not strictly connected with the Horticultural Department, a fair crop will be harvested.

The total yield of the College vineyards will not be so heavy as last year. Many varieties seemed to recover slowly from the effects of the dry, windy weather of last April and May. However, several new varieties will fruit this year which have never borne before, so that there will be no lack of interesting study in the vineyard.

The Hydrangea paniculata grandiflora southeast of the President's house, which is in full bloom just now, would attract attention at any time, but at this time of year, when there are so few things in blossom, it is particularly noticeable.

The Botanical Department is trying the effect of various fungicides on the strawberry leaf spot. Ammoniacal solution of copper carbonate, potassium sulphide, and sodium hyposulphite are being used, besides the old reliable Bordeaux mixture.

F. C. SEARS.

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

Course of Study.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies, besides one hour's daily practice in an industrial art; and variations from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two:—

FIRST YEAR.

FALL TERM....Algebra.
English Analysis.
Geometrical Drawing.
Industrial.

WINTER TERM...Algebra.
English Composition.
Bookkeeping.
Free-hand Drawing three times a week.
Industrial.

SPRING TERM...Algebra.
English Structure.
Botany.
Industrial.

SECOND YEAR.

FALL TERM.....Geometry.
Elementary Chemistry.
Horticulture.
Industrial.

WINTER TERM...Geometry completed, Projection Drawing.
Agriculture, for young men.
Household Economy, for young women.
Organic Chemistry and Mineralogy.
Twelve Lectures in Military Science.
Industrial.

SPRING TERM...Anatomy and Physiology.
Entomology.
Analytical Chemistry.
Twenty Lectures in Military Science.
Industrial.

THIRD YEAR.

FALL TERM.....Trigonometry and Surveying.
Agricultural Chemistry.
General History.
Industrial.

WINTER TERM...Mechanics.
Political History and Civil Government.
Rhetoric.
Industrial.

SPRING TERM...Civil Engineering, for young men.
Hygiene, for young women.
Physics.
English Literature.
Perspective Drawing two hours a week; Drafting two hours.
Industrial.

FOURTH YEAR.

FALL TERM....Agriculture, for young men.
Literature for young women.
Physics and Meteorology.
Psychology.
Industrial.

WINTER TERM...Logic, Deductive and Inductive.
Zoology.
Structural Botany.
Veterinary Science, for young men.
Floriculture, for young women.
Industrial.

SPRING TERM...Geology.
Political Economy.
An elective in Agriculture, Horticulture, Mechanics, or related sciences.
Industrial.

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage with greenhouse attached.

Horticultural and entomological laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, to cost \$60,000, and now in course of erection, designed to provide permanent quarters for the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies. This building is to be completed during the next fiscal year, and will stand near the south end of College Hall.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost \$14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 48x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing store-room, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Terms of Admission.

Applicants for admission at the beginning of the College year must be at least 14 years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, geography, English grammar, and United States history. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with the class from the first.

The following diplomas and certificates will be received in lieu of entrance examinations:—

1st. Diplomas received on the completion of a county course of study which has been approved by the Faculty, when properly signed by the county superintendent.

2nd. Certificates of passing the grammar grade in any city school with a course of study approved by the Faculty, when properly signed by the city superintendent.

3rd. Kansas teachers' certificates issued by the county board of examiners, showing that the above-named studies have been passed with a grade of at least 70 per cent.

The Faculty have approved the course of study adopted by the following counties and cities; others may be submitted for approval at any time:—

COUNTIES.

Allen,	Elk,	Linn,	Reno,
Anderson,	Ellis,	Marshall,	Rice,
Barber,	Ford,	Marion,	Riley,
Brown,	Geary,	McPherson,	Rooks,
Bourbon,	Greenwood,	Miami,	Rush,
Butler,	Harper,	Mitchell,	Russell,
Chase,	Harvey,	Montgomery,	Saline,
Cherokee,	Jackson,	Nemaha,	Shawnee,
Clay,	Jefferson,	Neosho,	Sumner,
Cloud,	Jewell,	Osage,	Wabaunsee,
Cowley,	Johnson,	Osborne,	Washington,
Dickinson,	Kingman,	Ottawa,	Wilson,
Doniphan,	Labette,	Pottawatomie,	Woodson,
Douglass,	Leavenworth,	Republic,	Wyandotte.

CITIES.

Abilene,	Concordia,	Kanapolis,	Oswego,
Anthony,	El Dorado,	Kansas City,	Ottawa,
Arkansas City,	Emporia,	Kingman,	Paola,
Atchison,	Eureka,	Larned,	Parsons,
Augusta,	Fort Scott,	Lawrence,	Pomona,
Beloit,	Fredonia,	Leavenworth,	Russell,
Burlington,	Gaylord,	Lyons,	Salina,
Caldwell,	Girard,	Manhattan,	Seneca,
Chanute,	Great Bend,	Mankato,	Solomon City,
Cherryvale,	Hiawatha,	McPherson,	Topeka,
Chetopa,	Holton,	Minneapolis,	Washington,
Clay Center,	Horton,	Newton,	Wellington,
Clifton,	Hutchinson,	Olathe,	Winfield,
Coffeyville,	Independence,	Osage City,	Wichita.
Columbus,	Junction City,	Osbome,	

Applicants over 18 years of age, who, for lack of advantages, are unable to pass full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions, upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Expenses.

Tuition is free, and no general fee for incidental or contingent expenses is charged.

Lessons in instrumental music—two a week—are from \$10 to \$14 a term, according to its length; one a week, \$6 to \$8.40. In classes

of two or more, the cost is less. One-half is to be paid to the instructor in charge with the first lesson; the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$2.75 a term; for the second year, \$3 a term; for the third year, \$6.50 a term; and for the fourth year, \$2.75 a term. Second-hand books may be obtained at lower prices.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$4.05; microscope for botany and entomology, \$1.50; case, pins, etc., for entomology, \$2.25; herbarium, \$1.50. The total expense for these articles during the four years is less than \$10.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.50 to \$3.50 per week, or table board in student clubs from \$1.50 to \$2.25 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

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DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

LAUNDRY.

WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first-class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday, returned each Friday. D. W. March, Agent.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

THE BEST INVESTMENT ON THE FARM.

BY PRES. GEO. T. FAIRCHILD.

EIGHTY years ago two young people, a youth of twenty-one and a maiden of eighteen, joined hands and hearts to found a family in old Massachusetts. Five years later, with three little boys and three hundred dollars in money, they built a log cabin on a hundred and twenty acre lot already paid for amid the forests of the Western Reserve in northern Ohio. Here they founded a home, to become the center for several generations of family influences, and the cherished center for kindly affections for untold successions of children's children.

In the hardships of a pioneer life in which full twenty years must be spent upon the drudgery of clearing heavy timber with only the fences and the ashes to pay for the labor, these young parents did not forget the true object of the home in the children. Every privation was felt for the children's sake, and every struggle against poverty was with double energy that the children might be cared for.

Chief among the causes of anxiety was the absence of schools. Both parents had received the benefit of New England common school training, and both had had slight experience in managing a district school. But in the wilderness there was not even a school-house, and the little boys were likely to become men with no schooling, while the little sisters who followed might be wild roses, indeed, for want of training. The father called together his half dozen neighbors within the township and proposed a school, offering himself to teach the school, if for each day taught one of the neighbors would chop in the clearing of the home farm. The bargain was agreed to, and for three winters this first school of that township, so supported, furnished the means of education to the rugged pioneer children. It was to some of them the foundation of larger growth and higher education for careers of usefulness and honor. It set the fashion for the town in enterprise.

As the family grew in numbers and in stature, the log house gave place to a larger one of brick, and that to a still larger framed dwelling; but still the chief thought of comfort and happiness was upon the young people within the home. For them the first Sunday school ever seen in that region was started. At their home the first temperance society of the county had its birth. From their home missions of helpfulness to the poor, the ignorant, and the wicked were started. The church found its resting place within the precincts of that same small farm.

Early it seemed best to add to the effectiveness of the farm by selling a small part to improve the rest, and this farm of one hundred and ten acres, only eighty of which were under cultivation, became one of the best in the county. On it was the first peach orchard of that now famous fruit region. Its apple orchard of grafted fruit won a name before many of the neighbors had learned to care for apples. It gained some of the first "Durham" stock sent north from Kentucky. It was a family of readers and thinkers as well as workers.

As the young people began to mature, the question with parents, and children too, turned upon the possibility of a broader education. They had kept up the public school, had started a private academy, and yet were not satisfied. Father and mother advised with the children and agreed to let the farm do its best to give all who desired to work for it a college education. With mother's help the boys could board themselves in the county seat while preparing for college, and earn part of their living by chores. The girls could spin and weave the cloth, and mother could cut and make both their work-day and Sunday suits. The farm gathered few of those hard-earned dollars, but they paid for tuition and books that were prized and used to the utmost.

It is not proper here to tell the complete story of how this home farm raised its crop of children and trained them for useful life, but the total of results is worthy of study. To this home were given ten children, six boys and four girls. Two of the boys lived only long enough to have a name and a tombstone. Four boy and four girls have passed a lifetime in thankful recognition of what the home did for them. All learned there to read and think. It was a center of good literature. That little farm helped five of the eight, three boys and two girls, to gain a good classical education. All three of these boys have held the honored place of president in well-known colleges. These girls have blessed the homes of prominent educators. The others have been foremost citizens in country homes. Of the grand-children, eighteen have taken college training, and no less

than thirteen have found useful places as educators. Others have won wealth and fame. All gathered to celebrate the golden wedding of their parents, and twelve years later rejoiced in the happy old age of the youthful pair who had planted the family in 1813. Then came the death of the mother, happy in her last breath over home, her children, and her children's children. She was borne to the grave by her four loving sons. In his ninety-ninth year, the father breathed his last in the same home, which had made his life almost a century of usefulness to humanity through industry and thoughtfulness.

Who can measure the profit of that family investment? The farm of one hundred and ten acres is still productive in the hands of a fourth generation, great grand children of its first possessor. It supported its owner for seventy-five years, helping him to train a family in usefulness, and fit them for a larger life of influence. It was a good investment for the youthful pair. But in all those years they found the best investment in their children. They were the chief jewels of that home, and the crown of their blessedness.

Today four of the eight have gone to their reward, blessing the parental love and wisdom that gave them training rather than wealth, and the youngest of the four survivors pays this tribute of grateful reverence to parents who invested their all in their children.

Every farm may become a home for children that shall rise up to call their parents blessed, for the best investment of hard-earned savings from the farm is in the education of the sons and daughters for useful, honored citizens.

SORGHUM IN KANSAS.

BY PROF. C. C. GEORGESON.

THE many varieties of sorghum may conveniently be classed under two general heads, namely, sugar-bearing sorghums and non-sugar-bearing sorghums. The first group covers all those varieties which contain sugar, many of which are rich enough in that substance to make their culture profitable for the sugar factory. The list numbers hundreds of varieties, and is constantly augmented by new sorts produced by chance and by artificial crossing. All of them do well in Kansas. Extensive plants for the manufacture of sugar from sorghum have been erected in several places in the State, and their successful operation gives the best possible proof of the adaptation of the climate and soil of Kansas to the production of this crop. The fact is so well known to the public at large that it is unnecessary to dwell upon it here. But while all varieties can be grown here, they are not equally profitable. The Kansas Experiment Station has for several years past experimented in testing varieties, with a view to ascertain which were richest in sugar. These tests have involved numerous analyses, and by rejecting all but those which showed a high per cent of sugar in the juice, the list has been purged of all inferior kinds. Moreover, by selecting seed from the cane richest in sugar of each variety, Professor Failyer has succeeded in increasing the per cent of sugar in several kinds in a marked degree. More than 20 per cent of cane sugar has thus been obtained in some instances, and over 19 per cent in others. For details on this interesting subject, the reader is referred to Bulletin No. 36 of the Kansas Experiment Station.

Profitable culture of sorghum for sugar demands a consideration of several points: First, the quality of the cane as regards the per cent of sugar; second, the yield per acre; third, the keeping qualities of the cane and early maturity, so as to secure a long working season; and fourth, the quantity and quality of leaves and seed as feeding materials. All of these points should be closely studied in the selection of varieties for sugar production.

But valuable as the sorghum plant is for sugar, it is of still wider usefulness, and therefore of greater general interest, when viewed as a forage plant, and it is more especially to this feature that I beg leave to call attention. Both the sugar-bearing and the non-sugar-bearing varieties take high rank as forage plants. The best kinds yield seed which is equal to corn as feed for cattle and swine, and their forage is rather better than corn stover, or the feed afforded by the corn plant after the corn is husked; and all varieties of sorghum alike have this very important advantage over corn, that they can better stand drought, and therefore a total failure of the sorghum crop is a rare occurrence, even in very dry seasons.

When it comes to a choice between the two classes of sorghum for forage, I place the non-sugar-bearing

varieties first, because they as a rule not only bear more seed than the sweet sorghums, but also more foliage, though when grown thickly for fodder only, without regard to the seed, there is no difference between the best varieties in either class. In western Kansas, where the short buffalo grass affords but little hay, it is a common practice to sow sorghum seed, either broadcast or with a drill, and mow the crop for hay, and four tons to the acre of such hay is not an unusual yield. The small, sweet variety, called the Early Amber, is frequently used for this purpose, because the stalks are small and branched and easily cured.

As a grain crop, the non-sugar-bearing varieties are the best yielders; as for instance, the kinds known as red and white Kaffir corn, Jerusalem corn, and milo-maize. The yield on good upland, and without irrigation, and with such culture as would be required for a corn crop, will vary with the season from 20 to 80 bushels of seed per acre. Red Kaffir corn has reached the latter figure here at the Agricultural Experiment Station in a year, with normal and well-distributed rainfall, and Jerusalem corn has given the former yield in an unusually dry season on upland, without irrigation, at the United States Grass Experiment Station near Garden City, in the western part of Kansas.

As to the feeding qualities of the seed, it has been proved by repeated experiments that it is equal to corn. With such facts before us, it is a question if it would not be the better part of wisdom to increase the area in those varieties of sorghum which are grown chiefly for the grain, and correspondingly decrease the area in corn over the entire region of the West where the corn crop is likely to be cut short every few years from a deficiency in the rainfall.

Although sorghum seed has been found to be good feed, there is some choice as to quality. All kinds of stock relish the light-colored seed the most. The dark-colored and black seed, from the large amount of tannin in the hulls, has a bitter or astringent taste that renders it objectionable. The light-colored kinds are free from this. Other things being equal, the white-seeded varieties are therefore to be preferred when grown for the grain. But, on the other hand, the white-seeded varieties that are so far known fall behind some of the others either in earliness or in yield. All things considered, I place the red Kaffir corn first on the list of important varieties. Upwards of 200 varieties have been tested here at the Experiment Station, and, as a substitute for corn, none was superior to red Kaffir corn. The grain, although red or light brown, is not appreciably astringent, and is much relished by stock. The plant is low and stocky, and does not readily blow down; it has an abundance of large foliage, of good feeding quality; it yields more grain and almost as much fodder as any other kind tested, and it matures early enough to escape injury from frost in Kansas. Next to this I would place Jerusalem corn. It does not yield so much of either seed or forage as the red Kaffir corn, but the grain is white and of superior quality, and the plant resists drouth well. Third on the list I would place white milo-maize. It is a large, vigorous plant, which produces a heavy yield of forage, and a fair yield of white grain of excellent quality. Its chief drawback is that it does not mature early enough to escape injury from frosts every year. The fourth place I would assign to white Kaffir corn. It yields less forage, but as much seed as the preceding, and is of equal feeding quality. It, too, is often injured by frost in this latitude before the grain matures. For the combined production of grain and forage all other sorts rank after these in Kansas.

The culture of these sorghums is essentially like that of corn. Whether for grain or forage, they are best grown in rows far enough apart to admit of cultivation, except as a hay crop, when the seed should be drilled closely or broadcasted.—*Special Report, State Board of Agriculture.*

Farming as a Business.

In spite of all the teachings of science and the professions of esteem by men who are in office or hope to be through the aid of farmers' votes, the word "farmer" is still used as a term of reproach, and is intended and accepted as an insult to those to whom it is applied. This fact shows that there is an undercurrent of popular estimation, and that said current is fed by a source that shows no signs of being reduced, but is rather on the increase. The slang of street vagabonds is of no importance, but there are people who would like to be called respectable and intelligent who, when they want to do a little worse than calling a man a fool or a slouch, will appease their wrath and express their contempt by calling him a "farmer." This custom finds its counterpart in the opinions manifestly held in regard to farmers by people in other business who seem to think that if they

should make a change and go to farming a "the education and business ability which they have acquired would be thrown away. This is shown by the men who are in business in cities and buy farms with their surplus capital and attempt to run them with hired help or superintendents. In many cases they do better than they would to manage the farms themselves, for almost any man who can be hired to care for a farm and stock has had experience and observation, which are worth more than a head full of theory.

It is a significant fact, however, that in such cases where business men have gone to farming on the strength of what they supposed was necessary to know, their figures, if they kept any, have forced them to admit that they could not make the business pay, and they usually sell out and charge their failure to anything but the right cause.

The fact of the case is that a farmer must be a weather prophet, a chemist, a financier, a stockbreeder, a botanist, an entomologist, a veterinary surgeon, a mechanic, and have capacity to enable him to use his skill in all these departments at once when occasion calls. He cannot depend on the daily market reports for the standing of his crops and the condition of his stock and the needs of his soil. These things must all be kept in his mind and under his eye, and he knows that a failure of any crop cannot be repaired before another year, and this fact makes him conscious of much responsibility, and exercise much thought and study at every step, which he gets no credit for; he may try experiments, but he must wait months, if not years, before he will know the result, while the mechanic or merchant can change his plans and start on another track at any time.

The skill and knowledge of the farmer are not always associated in his mind with the name of the science to which it belongs. The knowledge which enables him to recognize at a glance the first leaves of any cultivated plant among the weeds is botany just as much and more reliable than if he had learned it in the books, and the same is true of many other branches of learning that he must be skilled in. While he may not be a master of the ceremonies of society and the most customary construction of sentences, his mind is full of knowledge which almost any other man would be proud of if he had got it in the popular way, from books.—*Mirror and Farmer.*

Practical Exhibits at the Fair.

Visitors at the Kansas State Fair last year were delighted with the exhibit made in the horticultural department. It was under the superintendence of Prof. Popenoe, whose students were on hand with samples of fruits grown in different parts of the State, prepared to answer all questions and to inform visitors of the varieties adapted to each section of the State, which were hardy and which were not, how far north and west they were hardy, and where they failed, and also to point out samples of fruit adapted to the different sections. This was altogether the most interesting department of the exhibit at Topeka last year. We spoke of it at the time and speak of it again because it is an example that could be followed at every State fair in the West this year. Many the entire western country, and well-informed horticulturists can tell very accurately how far north and west a certain variety of fruit will grow, and can give their values in the market and on the farm. Farmers are swindled unmercifully by tramp fruit tree vendors and unscrupulous dealers from the East by having palmed off on them varieties of fruits which, while perfectly hardy five hundred miles east or three hundred miles south, are of no more use in some of the newer sections of the country than so much hazel brush. The horticultural societies and experiment stations have already mapped out almost there is no better place than the State fairs to disseminate this information, and any visitor can, by taking down the names and fixing the quality in his mind, tell what trees he can safely buy, and on what he will be throwing his money and time and labor away. It takes a number of years for an orchard to bear fruit, and it is absolute cruelty to the farmer to sell him trees, however valuable in certain sections, that will not grow in his, and have him spend time and money and labor for years, with his wife waiting and watching for the time when they can eat fruit from their own orchard, and then be disappointed. We have all had pity for the foolish old hen who sits for three long weeks on a plaster paris egg. Equally fruitless and vain, and vastly more cruel, is it to have the farmer spend years instead of weeks trying to obtain fruit from trees that are not adapted to the climate, and are as incapable of producing fruit under the circumstances as a plaster paris egg is of producing a first-class Plymouth Rock chicken.—*Live Stock Indicator.*

The "Greatness" of City Life.

The country boys, choosing their business, will either stay on the farm or go into the city, and in a great many cases I fear they choose the city life because they imagine they can achieve greater success, earn a greater reputation, in fact become "greater" in every sense of the word. This is a mistake which many boys make when they start in life for themselves.

Now should we not, as country boys, if we are so fortunate as to be blessed with a good country home, try to cultivate a love for some branch of the healthful, enjoyable, and profitable, country life, and let others who are not so well situated pursue "greatness" and other kindred uncertainties of city life? Do not for one moment entertain the idea that a young man cannot make a success in the country for if our whole mind and energy is applied to our chosen business we shall surely succeed.—*E. H. Ballou, in Rural New Yorker.*

FARM NOTES FROM VARIOUS SOURCES.

Under present conditions on the farm, every advantage must be taken to reduce expenses when it can be done without detriment to the stock or farm.—*Kansas Farmer.*

I think if farmers would raise more small fruit and cultivate the gardens better, they would get more profit in it than almost anything else they have on the farm.—*W. N. Page, Kendusky, Maine.*

The best quality of meat is secured from a pig and not from a hog. Therefore we should crowd our pigs from birth so as to make them fit for market at the earliest possible age—six months.—*Stockman and Farmer.*

One of the items in wintering stock economically is to supply a good variety. No one material supplies the elements of nutrition in the right proportion to secure the best possible results at the lowest cost.—*Kansas Farmer.*

Any one may be always suspicious of a horse if a man cracks a whip over him to make him "dance around" in the stall. This is done for the purpose of limbering the horse up, especially if he has a spavin.—*A Veterinary Surgeon.*

There are many agricultural products that have never been attempted in this country, simply because attention has never been called to them. Experiments are now being made with a view of widening our variety of production.

A bulletin from the New York Experiment Station gives dehorning experiments which show that for efficiency, cheapness, and ease of application, stick caustic potash can be safely recommended for preventing the growth of horns; and that the earlier in the life of the calf the application is made the better.

The value of sheep to the farm is perhaps not understood by many farmers. It is an old proverb that wherever the foot of the sheep touches the land it is turned into gold. Sheep husbandry has a value to make the land more profitable, more productive, at a less expenditure than any other animal kept on the farm.—*Kansas Farmer.*

Enjoyment of the boasted comforts of country life should be the watchword of every home. The boy who is compelled to sleep in a hot attic, while the cool bedroom remains closed, awaiting no expected visitor, will not value his home, and why should he? The best is none too good for the owners—the parents and their children.—*Farm and Fireside.*

What is money that we should worship it, and what are large farms to us when we form habits in their acquirement that prevent us from getting the best of life? The young members of the family cannot see the worth of a life that is one continual "grind," and then comes unrest and a longing for the attractions that they think are seen in towns.

An agricultural writer must of necessity repeat facts. The average rural reader is skeptical about new things in these days of farm writers, whose words profusely conceal a lack of real ideas. One fact will bear constant reiteration. If you don't know what your crop actually cost, you can never know prosperity. You can so farm that you will know, if only sufficient pains be taken. Will you do it?—*American Farmer.*

Nothing is now more universally accepted than the fact that the peach is an improved variety of the almond. The almond has a thin shell around the stone, which splits open and exposes the stone when mature. This outer skin has simply become fleshy in the peach, so that is all that gives it its specific character. It seems now clear from investigation in the history of ancient Babylon that in their gardens, now nearly 4,000 years ago, the peach was cultivated then as it is now. It must have been many years before this that the peach was improved from the almond, and this fact goes to show the great antiquity of the fruit. Possibly gardening in some respects, at least so far as it relates to many of our cultivated fruits, was as far advanced six or perhaps eight or ten thousand years back as it is today. Phoenicians many thousands of years ago, as is proved by the records, had in their gardens almonds, apricots, bananas, citrons, figs, grapes, olives, peaches, pomegranates, and even sugar cane was in extensive cultivation. Certainly this shows how very far advanced these nations were in garden culture these many years ago.—*Meebans' Monthly.*

Expenses.

Tuition is free and no general fee for incidental or contingent expenses is charged.

Lessons in instrumental music—two a week—are from \$10 to \$14 a term, according to its length; one a week, \$6 to \$8.40. In classes of two or more, the cost is less. One-half is to be paid to the instructor in charge with the first lesson; the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$2.75 a term; for the second year, \$3 a term; for the third year, \$6.50 a term; and for the fourth year, \$2.75 a term. Second-hand books may be obtained at lower prices.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$4.05; microscope for botany and entomology, \$1.50; case, pins, etc., for entomology, \$2.25; herbarium, \$1.50. The total expense for these articles during the four years is less than \$10.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.50 to \$3.50 per week, or table board in student clubs from \$1.50 to \$2.25 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Secy. Graham and Prof. Nichols ride new pneumatic bicycles of Sylph and Ariel makes respectively.

This last week has witnessed the filling of a large silo with a little over eighty-six tons of ensilage.

The Farm has purchased several tons of hay from Robt. Drake, about twelve miles northwest of town.

The Horticultural Department is shipping a fine lot of fruit—grapes and peaches—to the World's Fair.

The early varieties of soy beans have just been harvested, from which a large yield of seed beans is expected.

The day is coming, it is hoped, when the city walks leading to the College will be cleared of weeds and made passable.

Assistant Botanist Carleton's father purchased the Gardner property on the "bench," and has built an addition as large as the original house.

President Fairchild enjoys the distinction of being one of three upon whom his alma mater, Oberlin College, has bestowed the degree of LL. D.

Prof. Hood will, with the opening of the Fall Term, introduce a hand-book in wood-working entitled "Exercises in Wood-working," by Ivin Sickels, M. Sc.

Blister beetles have well-nigh destroyed the beauty of the aster beds. The insects collect in great numbers on the flowers, suck the honey from them, and leave only a mass of withered petals.

The Department of Veterinary Science a short time since received from Paris the horsekin ordered several months ago. It is in place in the museum, and will be used to illustrate Dr. Mayo's lectures in future.

Secretary Wykes of the State Board of Public Works and State Architect Davis inspected the excavation for the new Science Hall yesterday. They found a most excellent foundation in the solid clay subsoil of the hill.

Prof. Georgeson has recently been elected a member of the Royal Agricultural Society of Denmark in recognition of his visit last winter as investigator for the United States Department of Agriculture into the dairy interests of Denmark.

Regent Street, who takes a lively interest in horticulture, has undertaken the task of testing in the sub-irrigated fruit plats on his farm near Oberlin several of the leading varieties of strawberries grown at the College for two or three seasons past. He will plant from ten to twenty varieties, and furnish data as to productiveness, vigor of growth, and freedom from disease.

Regent Street, in his paper, the Oberlin Herald, has these good words for the College: "We have a few catalogues of the State Agricultural College at this office. If any of our young people contemplate taking a course of higher education we wish they would call and get one of these catalogues. This College offers unsurpassed advantages for a practical education. Tuition free, living expenses very low, location one of the best in the world."

Mr. Howard M. Jones, who is employed for the coming year as rhetorical instructor, is a graduate of Oberlin College, Ohio. He comes highly recommended for the place by those who have known his work elsewhere, and is thoroughly in sympathy with the purpose and methods of the College. Having worked his way through college himself, he appreciates thoroughly the needs of our students. He will be welcomed by former students as the friend and classmate of Mr. J. W. Rain, who took somewhat similar work year before last. Mr. Jones has already entered upon his preparation for the year, and makes his home at Prof. Olin's.

Important changes in the arrangement of our library are now in progress. About thirteen hundred new books have been added during the vacation, making the total number of bound volumes nearly fourteen thousand. In order to accommodate the new purchases, many public documents have been removed to closets up stairs, where they will be stored until the completion of the new building. The old system of placing the books in a definite location by alcove, case, and shelf has been gradually abandoned, and they are now being classified by the Dewey system of relative numbers. This has resulted in many changes of the location of the books in the library, and may, for a short time, be inconvenient to the old students, but when it is completed, its simplicity will be advantageous to all who use the library. The part of the new building devoted to the Library will accommodate about seventy thousand volumes. This will be ample room for the growth of a number of years. The work of re-classi-

fication now in progress is done with a view to accommodation to the new and larger quarters we are soon to occupy, and will make the change to them very simple indeed. All that will be needed will be to carry the books to the new room and place them upon the shelves in the order of the class numbers found upon the books themselves.

Electricity is the coming power, and the College is the first to adopt it in this section. A generator and four motors have been received, and only await the completion of the central steam plant to be placed in operation. The generator is forty-horse-power, with a speed of 770 revolutions per minute. The motors will be distributed as follows: Wood shop, twelve-horse-power, speed 1400; barn, ten-horse-power, speed 1000; iron shop, eight-horse-power, speed 1200; printing office, five-horse-power, speed 1700. The printing office motor will be operated temporarily by the iron shop dynamo used as a generator. The generator will furnish sufficient power to run 400 incandescent lamps of sixteen-candle-power each, and it is only a question of time until these lights will supplant the unsatisfactory gas burners in most of the College buildings. The apparatus above named is the manufacture of the Belknap Motor Company, Portland, Me., and was purchased by Professors Nichols and Hood after a thorough inspection of the various makes on exhibition at the World's Fair. In point of power developed, good workmanship, and neatness of design, these machines are thought to have no superior.

The forty-second meeting of the American Association for the Advancement of Science was held at Madison, Wisconsin, August 17th to 22nd. About three hundred scientists were in attendance, five of whom were from Kansas. The Agricultural College was represented by Mrs. Kedzie, Prof. Hitchcock, and Mr. Carleton. The citizens of Madison raised the sum of \$2,200 for the entertainment of the visitors, for which hospitality too much cannot be said in praise. They were given an excursion to the Dalles of Wisconsin, a reception and lawn fete with magnificent illumination, a moonlight excursion on one of the lakes, and many lesser entertainments. Mrs. Kedzie, secretary of Section I, Economic Science and Statistics, gave one of the addresses of the concluding exercises. The botanists were out in full force, there being over forty professionally engaged besides a number of amateurs. Prof. Hitchcock presented some notes to the Botanical Club on the form of Virginia Creeper which will not cling to walls, and on the pollination of *Eurothera Missouriensis*. Probably the most important work done by the Club was the organizing of the American Botanical Society. Following the meeting of the Association was that of the Madison Botanical Congress, over which the eminent French horticulturist, N. Vilmorin, presided for a portion of the time. Much important international work was undertaken, resulting in the appointment of six committees, who will report at the next meeting of the A. A. S. Mr. W. T. Swingle, formerly of this College, took an active part in the meetings, and serves on three of the committees. Prof. Hitchcock serves on two, Bibliography and Terminology in Vegetable Physiology. Prof. W. A. Kellerman, formerly of Manhattan, presided over the Botanical Club.

GRADUATES AND FORMER STUDENTS.

W. A. Anderson, '91, is manager of a lumber yard at Liberal.

P. S. Creager, '91, has engaged with the Topeka Capital to report the Kansas fairs.

A. Dickens, '93, will teach the coming year at Chalk Mound, Wabunsee County.

M. F. Hulett, '93, finds employment with the Boughton Publishing Company at Lawrence.

C. D. Adams, Third-year, recently underwent an operation for wry-neck with beneficial results.

J. E. Mercer, Second-year in 1892-3, will take an electrical engineering course at the State University.

E. M. Fairchild is settled as pastor of a church in Spokane, Washington, beginning his work there September first.

Abbie Marlatt, '88, and E. Ada Little, '86, have returned to their duties in the Utah Agricultural College at Logan.

J. L. McDowell, '92, has returned from Blackfoot, Idaho, his department in the Indian school having been abolished.

A. J. Thoos, of Alma, an old College student, is the Populist nominee for Register of Deeds in Wabunsee County.—*Republic*.

C. E. Abbott, '93, is reading law with his father, at Garden City, and will take the law course at the University a year hence.

G. A. Browning, Third-year in 1890-91, has returned from Kingman, Oklahoma, where he worked for a year or more at the tinner's trade.

Mrs. Laura L. Baker-Dunn, student in 1884-5, called with her husband today. She with her children will spend some time yet in Manhattan.

Married, on Sunday, 27th of August, at Paradise, Miss Jane Kress to S. C. Harner ['90] of Leonardville, Rev. Taylor officiating.—*Nationalist*.

Lieut. J. G. Harbord, '86, orders his paper changed from Fort Clark, Texas, to Fort Leavenworth, where he will for two years attend the Government Military Institute.

Pearl Dow, '91, is engaged in the laudable undertaking of securing a list of 1,000 subscribers for the *Ladies Home Journal*, for which she will be rewarded by the publishers with a year's free tuition at the Boston

Conservatory of Music. She has already enrolled several hundred names, and hopes to secure the desired number before the holidays.

G. V. Johnson, '91, visited the College a few days this week on his way to the "Strip" from Idaho, where he has taught school and worked at the printer's trade for the past year.

W. W. Hutto, '91, and Maude E. Parker, Third-year in 1892-3, were married August 29th, in Manhattan, by the father of the bride. Mr. Hutto is Professor of English in Oklahoma Agricultural College.

Archie Robertson, Third-year, had the misfortune to catch two fingers in the printing office cylinder press last Saturday, losing both nails. No bones were broken, fortunately, and the wounds will soon heal.

J. H. Lynch, student in 1878-9, and later one of the contractors on the Main College Building, called at the College yesterday. Mr. Lynch is one of the enterprising and successful architects of Wichita Falls, Texas.

C. H. Thompson, '93, is spending a few days at the College after three months in Southwestern Kansas as Field Agent for the Botanical Division, U. S. Department of Agriculture. He will in the future be stationed at St. Louis.

W. P. Tucker, '92, has sold his interest in the *Douglas Tribune*, and is now studying preparatory to entering Leland Stanford Junior University after the holidays, where he plans to pursue geology and zoology for a period of three years.

F. W. Dunn, '84, a successful fruit grower in Glenwood Springs, Colorado, greeted old friends at the College yesterday. He reports that his brother, Harvey Dunn, a student in 1886-7, is managing the dynamo in the Lowe Electric Light Plant at Denver.

H. M. Cottrell, '84, will not lose his situation as Superintendent of Levi P. Morton's Ellerslie farm by the destruction of the great barn and most of the herd of Guernseys by fire in July. It was reported at one time that Mr. Morton would not rebuild or again engage in breeding or dairying, but a recent issue of the *Dairy World* says the work of rebuilding has already begun, and thinks that "Guernsey breeding and dairying will be pursued along the lines so splendidly carried on in the past at Ellerslie."

Ben Skinner, Committee, furnishes the following notice: "In accordance with the instructions of the class of '91, I propose to the members that we, collectively and severally, make every effort to carry out the following rules and regulations respecting our class letter: The letters are to be in the hands of the committee by November first. A postal note or money order for seventy-five cents must be enclosed in each letter. It is desired that no letter contain less than one hundred words nor more than two hundred and fifty words. The letters will be printed and bound in a neat volume by the College Printing Department, and mailed therefrom before January first, 1894, to the members of the class only. All letters will be sent to the Committee at Fairview, Kansas. Each member of the class who reads this notice will please make an effort to notify other members. This notice respecting dates and matter will be carried out without deviation."

Board Meeting.

The meeting of the Board of Regents on August 15th, 16th, and 17th found all the members present. Much time was spent in general consideration of the needs of the College, and in auditing accounts. The various committees reported upon matters committed to their charge, including the progress of buildings, and the selection of Mr. Howard M. Jones, of Oberlin, Ohio, as instructor in rhetorical exercises. The Loan Commissioner reported a large amount of funds uninvested, and \$25 was appropriated for advertising in eastern papers.

The following expenditures were authorized: For carpeting the sewing room, \$70, and for fitting locks in drawers and cases, \$50; for seating classroom in the Mechanical Department, \$60; for completing the equipment for the steam and electrical plant, \$600; for specimens of tile, marble, and other decorative building materials in the Industrial Art Department, \$50; for drawing tools in Botanical Department, \$10; Prof. Georgeson was authorized to purchase twenty-five tons of hay, and a car load of mill feed. A supplementary estimate of the Station Council for supplies, amounting to \$45, was allowed.

The Committee on Buildings and Grounds was instructed to indefinitely postpone repairs upon the old house on Manhattan Avenue, and to inspect carefully the need of repairs upon the farm bridge. A proposition to lease the Williston place for five years was referred to the Committee on Buildings and Grounds.

Changes were made in salaries as follows: Secretary of the College, reduced to \$1400; Professor of Veterinary Science, reduced to \$1600; F. C. Sears, Foreman of Garden, increased to \$720; C. M. Breese, Assistant in Chemistry, increased to \$1000.

The Special Committee appointed to present names in connection with the course of lectures outlined in the June meeting were empowered to employ suitable persons to give the course of lectures on economic subjects during the fall term, at an expense not to exceed \$25 and expenses for each lecture.

President Fairchild and Regent Street were appointed delegates to the meeting of the American Association of Agricultural Colleges and Experiment Stations, to be held in Chicago October 17th next.

The Secretary was authorized to apply in behalf of the graduates of the College for sanction of the course

of study by the State Board of Education of California.

The date of the next meeting was fixed for Tuesday, October 10th, and after finishing the routine examination of accounts the Board adjourned to that date.

The Weather for August.

BY PROF. E. R. NICHOLS.

Temperature.—The mean temperature for August, 1893, was 72.26°, which is 3.70° below normal. There have been thirty-one warmer and only four cooler Augusts in the past thirty-six years. The highest temperature was 101°, on the sixth, and the lowest, 41°, on the 3rd and 30th,—a monthly range of 60°. The warmest day was the 7th, the mean being 82.75°; the coolest was the 30th, the mean being 58.25°. The greatest range for one day was 52°, on the fifth and sixth, and the least, 17°, on the 16th. The mean of the observations at 7 A. M. was 64.840; at 2 P. M., 85.10°; at 9 P. M. 69.55°. The mean of the maximum was 87.97°; of the minimum, 53.94°, the mean of these two being 70.96°.

Barometer.—The mean barometer for the month was 28.867 inches, which is a little above normal. The maximum pressure was 10.143 inches, at 7 A. M. on the 30th; the minimum, 18.610 inches, at 2 P. M. on the 10th,—a monthly range of .533 inches.

Rainfall.—The total rain fall for the month was 2.92 inches, which is .59 inch below normal. Rain fell in measurable quantities on the 10th, 11th, 12th, 15th, 17th, 19th, 22nd, 24th, and 27th.

Cloudiness.—There was one day entirely cloudy, two five-sixths cloudy, two two-thirds cloudy, four one-half cloudy, five one-third cloudy, five one-sixth cloudy, and twelve clear. The per cent of cloudiness was 27.

Wind.—The wind was from the north seventeen times, northeast fourteen times, south thirteen times, east and southeast ten times, southwest eight times, northwest three times, and a calm eighteen times.

Below will be found a comparison with the preceding Augusts and a summary for June and July:

August.	Number of rains.	Rain in inches.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858.....	5	3.98	.....	74.65	100	50	.....	.....	.....
1859.....	5	6.84	SE	76.89	98	58	.....	.....	.....
1860.....	5	3.00	S&SW	85.00	112	.....	.....	.....	.....
1861.....	4	1.39	S	78.14	99	62	.....	.....	.....
1862.....	8	2.85	S	77.66	101	64	.....	.....	.....
1863.....	8	6.21	S	77.97	96	54	.....	.....	.....
1864.....	6	1.84	NE	77.73	99	56	.....	.....	.....
1865.....	8	5.04	SE	75.01	90	59	.....	.....	.....
1866.....	2	.10	SE	76.31	98	55	.....	.....	.....
1867.....	4	.70	S	77.00	94	59	.....	.....	.....
1868.....	8	5.94	SE	70.44	92	54	.....	.....	.....
1869.....	10	2.23	SW	75.25	91	62	.....	.....	.....
1870.....	13	5.21	NE	71.95	99	52	.....	.....	.....
1871.....	8	4.23	SW	75.27	94	53	.....	.....	.....
1872.....	8	5.32	SW	76.92	96	57	.....	.....	.....
1873.....	5	1.64	SW	77.88	104	59	.....	.....	.....
1874.....	4	.25	SW	83.11	109	58	28.72	28.90	28.32
1875.....	6	1.40	S	72.12	93	47	28.73	28.94	28.56
1876.....	8	10.70	SE	76.31	92	48	28.79	29.12	28.60
1877.....	6	2.78	SW	75.04	96	43	28.80	29.03	28.56
1878.....	5	2.66	SW	77.57	97	47	28.77	28.96	28.63
1879.....	4	1.61	SW	77.57	99	61	28.75	29.01	28.54
1880.....	11	8.61	SW	76.00	97	46	28.65	28.92	28.42
1881.....	2	.43	SW	83.81	105	65	28.65	28.80	28.74
1882.....	3	.87	N	73.64	91	52	28.70	28.85	28.49
1883.....	4	3.94	E	72.96	93	50	28.73	28.89	28.44
1884.....	8	6.21	SE	72.14	94	48	28.94	29.80	28.40
1885.....	5	.89	SW	74.17	98	41	28.65	28.85	28.38
1886.....	9	2.06	SW	79.27	110	49	28.88	29.06	28.56
1887.....	11	6.66	S	73.65	106	51	29.04	29.20	28.88
1888.....	9	4.46	SE	74.11	104	49	29.03	29.29	28.77
1889.....	6	2.48	.....	74.06	97	51	29.15	29.32	29.00
1890.....	8	5.72	SE	74.33	102	50	28.91	29.15	28.72
1891.....	5	.98	S	73.65	102	40	28.82	29.13	28.55
1892.....	6	4.32	E	74.52	105	46	28.85	29.06	28.56
1893.....	9	2.92	N	72.26	101	41	28.87	29.14	28.61
Means.....	6.5	3.51	SW	75.96	99	51	28.86	29.03	28.53
June.....	11	6.26	S	73.94	100	39	28.78	29.11	28.02
Means.....	8	4.43	SW	73.62	97	50	28.72	29.05	28.42
July.....	9	4.29	S	78.60	101	40	28.78	29.01	28.52
Means.....	7.7	4.66	SW	78.39	99	57	28.79	29.05	28.55

Excelsior.

Never rest quietly in the idea that there is no further chance for improvement in your management. This is a world of improvement, and the present age is one of the greatest progress known in history. Criticise yourself and all your doings, see what your neighbors around you are doing, read and study the bulletins of your agricultural station, read at least one good agricultural paper to see what new ideas are springing up in the world, attend the conventions and institutes when they come within your reach, be live men in the world, and let no man long enjoy a good thing without your finding it out and deriving some benefit from it yourselves. As citizens of this great republic and denizens of the world, we constitute one grand brotherhood, and are entitled to share in all the amenities and benefits which our talents, properly applied in the spirit of true fraternity, will bring to us as our reward for well-doing.—*Mirror and Farmer.*

The cheapest property to-day in America is timber land. Its advance has not been rapid since the panics during the seventies. The demand for wood pulp, the wanton destruction by fire of our forests, the increase in our population and many other causes all are tending to make timber more valuable. If you own woodland anywhere, hang on to it, if you have to live on acorns and water.—*American Farm News.*

Means of Illustration.

Agriculture.—One hundred and eighty-five acres of land used for farm purposes, with hundreds of plats under experiment in grain, grasses, and forage crops; and illustrating various methods of culture and rotation.

A barn 50x75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48x96 feet, for grain, hay, horses, and cattle. Both buildings are of stone and are provided with power, and equipped with improved machinery for shelling, threshing, cutting for the silo, and steaming.

Two piggeries—one of ten pens, for experimental uses, and one of six pens, with separate yards for general purposes.

An implement house, 22x50 feet, of two stories, and corn cribs. Shorthorn, Aberdeen-Angus, Hereford, Holstein-Friesian cattle; Berkshire and Poland-China swine; and Shropshire sheep. Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$26,000.

Horticulture and Entomology.—Orchards containing one hundred varieties of apples, thirty of peaches, thirty of pears, twenty of plums, thirty of cherries, and five of apricots.

Small-fruit gardens, with two hundred varieties of small fruits, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with one hundred and sixty varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties, of from one to twenty-five years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about one hundred and fifty varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hotbeds and cold frames, and experimental beds. Practice rows for students' budding, grafting, cultivating and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$16,000.

Chemistry and Mineralogy.—Eight rooms fitted with tables and apparatus for a class of eighty students in qualitative analysis, eight in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$8,200.

Geology, Zoology, and Veterinary Science.—A general museum, well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and mollusks in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates, in alcohol. Collections of mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In veterinary science: A laboratory fitted with apparatus and re-agents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, including general museum, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-eight compound microscopes, four dissecting microscopes, tools, re-agents, etc. Valued at \$3,750.

Drawing.—Models, plaster casts, patterns, charts, easels, and implements. The class room is provided with top light, and furnished with twenty-four new Dietzgen patent drawing tables. An adjacent room is fitted up with running water, coating table, ruby light, etc., for blue and black printing. Valued at \$2,000.

Physics.—Complete physical apparatus, for general instruction in physics, and meteorological instruments, including a self-recording anemometer. Among the apparatus for special work may be mentioned Coulomb's torsion balance, Kohirausch differential galvanometer with reading telescope, Deprez-Carpentier ammeter, Ayrton and Perry's voltmeter, Thompson's potential and current galvanometers, Carhart-Clark standard cell, standard legal ohm, Wheatstone's meter bridge, Edelman dynamo. The value of the whole is \$4,000.

Mathematics and Surveying.—Transits, plane table, compasses, levels, chains, models, etc. Valued at \$1,300.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, frierer, boring machine, grinder, and general chest of tools for fine work.

Shops for iron work contain blacksmith forges to accommodate at least sixteen; brass foundry of twelve benches and large furnace for brass; iron foundry, with two-ton cupola; machine shop equipped for thirty students, including, besides hand tools, lathes, drills, planer, etc.

Inventory of material and apparatus in both shops, \$14,000.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture. Valued at \$800.

Printing Office, with thirty pairs of cases; large fonts of 6-point, 8-point, 10-point, and 11-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press, a new Liberty quarto-medium job press, a Gordon eighth-medium job press; a mitring machine, a rule-curving machine, and a paper cutter. Value of equipment, \$4,300.

Sewing Rooms, with eight machines, models, patterns, and cases; worth \$700.

Music Rooms, with five pianos, four organs, other instruments, and nine charts; valued at \$1,800.

Armory, containing one hundred and fifty stands of arms (breach-loading cadet rifles, caliber .45), with accouterments; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$1,000.

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes

each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silver-ware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

LAUNDRY.

WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first-class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday, returned each Friday. D. W. March, Agent.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

THE INDUSTRIALIST.

VOLUME XIX.

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

COLLEGE GROWTH FOR 1893.

[Report of the President of the Kansas State Agricultural College to the Secretary of Agriculture and the Secretary of the Interior, as required by act of Congress of August 30, 1890.]

THE year has been in many respects one of the most prosperous in the history of the College. Although the number of students enrolled is not greater, the number in advanced classes, especially in post-graduate studies, has increased. The instruction has been in all departments more satisfactory because of added facilities; but especially in the industrial departments of agriculture and mechanic arts. The State has provided for erection of a fine building, to contain the library, the museum, and classrooms and laboratories for botany, entomology, and zoology, at a cost of \$60,000. It also is erecting a general steam plant at a cost of \$14,000, to furnish heat and power for all the departments not otherwise provided for. Engines and dynamos are added from College funds for distribution of power, and lighting the main buildings. During the winter, the College held a short course of thirty lectures for farmers, and conducted a dozen institutes in various parts of the State. The Experiment Station has published bulletins upon wheat culture, upon feeding steers, upon actinomycosis, or "lumpy jaw" of cattle, upon sorghum and sugar beets for sugar content, and upon potato culture, all of which have been well received both in this State and elsewhere as contributing valuable information to the store of knowledge for farmers.

In the Columbian Exposition, this College has taken its place as an exhibitor in several locations. It has distinct exhibits in the Department of Liberal Arts and in the Kansas State Building, and has furnished a considerable element in the Co-operative Exhibit of the Agricultural Colleges and Experiment Stations, as well as incidental illustrations in the general educational exhibits of the State and the Nation.

A full detailed report of the several departments of the College is required by State laws, and published biennially. The annual catalogue, the latest biennial report, and the annual report of the Station are filed herewith as supplementary to this report, all of which is respectfully submitted.

RECEIPTS FOR AND DURING THE YEAR ENDED JUNE 30, 1893.

State aid.—Appropriations for building or other special purposes	\$ 2,706 30
Federal aid.—Income from land grant, act of July 2, 1862	30,187 04
For experiment stations, act of March 2, 1887	15,000 00
Additional endowment, act of August 30, 1890	18,000 00
Fees and all other sources	8,364 70
Total receipts	\$74,258 04

EXPENDITURES.

College of Agriculture and Mechanic Arts	\$72,562 21
Experiment Station	15,000 00
Total expenditures	\$87,562 21

PROPERTY AND EQUIPMENT.

Agricultural—Farm and Horticultural departments—value of buildings, barns, greenhouses, etc.	\$ 18,000 00
Of other equipment	30,000 00
Total number of acres	319
Acres under cultivation	250
Acres used for experiments	150
Value of farm lands	30,000 00
Mechanical department, value of buildings, shops ..	11,000 00
Of other equipment	15,000 00
All other departments,* value of buildings	106,000 00
Of other equipment	85,000 00

*These other departments are a part of the College of Agriculture and Mechanic Arts, which is wholly separate from all other institutions.

FACULTY.

	Male.	Female.
Collegiate and special classes	24	7
Number of staff of Experiment Station	14	..
Total, counting none twice	29	7

STUDENTS.

	Male.	Female.
Collegiate and special classes	372	186
Graduate courses	14	15
Total, counting none twice	386	201

LIBRARY.

Number of bound volumes, June 30, 1892	12,529
Pamphlets	3,500
Bound volumes added during year ended June 30, 1893 ..	1,115
Pamphlets	110
Total bound volumes	13,644
Total pamphlets	3,610

GEO. T. FAIRCHILD, President.

REPORT OF TREASURER.—FUND OF 1890.

Balance on hand July 1, 1892	\$ 1,472 60
Date of receipt of installment for 1892-3, August 13, 1892 ..	..
Amount	18,000 00

Total available for year ended June 30, 1893

Disbursements thereof for and during the year ended June 30, 1893:—	
Agriculture, as per Schedule A	\$ 3,208 28
Mechanic Arts, as per Schedule B	3,426 66
English Language, as per Schedule C	2,885 34
Mathematical Science, as per Schedule D	3,633 29
Physical Science, as per Schedule E	766 67
Natural Science, as per Schedule F	4,593 36
Economic Science, as per Schedule G	900 00

Total expended during year	19,411 60
Balance remaining unexpended July 1, 1893	61 00

I hereby certify that the above account is correct and true and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named, and that said expenditures were applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life and to the facilities for such instruction.

JOSHUA WHEELER, Treasurer.

SCHEDULE A.—Disbursement for instruction in Agriculture and for facilities for such instruction, during the year ended June 30, 1893.

For the salaries of Professors in Agriculture and Horticulture, in part, with Assistants (2)	\$3,106 66
Apparatus	101 62

Total

SCHEDULE B.—Disbursements for instruction in Mechanic Arts and for facilities for such instruction, during the year ended June 30, 1893.

For the salaries of Professor of Mechanics, and three Foremen

SCHEDULE C.—Disbursements for instruction in English Language and for facilities for such instruction, during the year ended June 30, 1893.

For the salaries of Professor of English Language and Literature, and two Assistants

SCHEDULE D.—Disbursements for instruction in Mathematical Science and for facilities for such instruction, during the year ended June 30, 1893.

For the salaries of Professor of Mathematics, Professor of Industrial Drawing, and Assistant

SCHEDULE E.—Disbursements for instruction in Physical Science and for facilities for such instruction, during the year ended June 30, 1893.

For salary of Professor of Physics, in part

SCHEDULE F.—Disbursements for instruction in Natural Science and for facilities for such instruction, during the year ended June 30, 1893.

For salaries of Professor of Chemistry and Assistants, Professor of Botany, and Professor of Physiology

SCHEDULE G.—Disbursements for instruction in Economic Science and for facilities for such instruction, during the year ended June 30, 1893.

For salary of President, in part

Fitting Our Boys For Employers.

The time is past when men in America even can claim to be equal; we have "imported" too much. Doubtless many may deny this; but while the assumption which we often deduce from our great national document may have been true in Jefferson's day—the day when the negro was only a part of the stock of the plantation—things are different now. He is now a man, with "a standard of living." And the imported Italians and Chinamen are with him, in this sense, if against him in all others. Are we with them all? No; for equal rights do not make equality.

But it is this question of a standard of living that needs our keenest study. It is this that lies at the bottom of the problem as to whether a college education "pays" or not. It is this that influences the social status now of the farmer as well as that of the mechanic and the man of wealth. Worse than useless is it to squirm and wriggle, and with blatant emphasis and insistence assert and re-assert that the farmer is king of the world, the equal of the president, or of the proudest of the 400 in our most magnificent city. Broadly speaking, it is not so; it never can be so, as long as he is contented to be a mere beast of burden!

The two questions, "Shall farmers' sons go to college?" and "Shall farmers do days' work?" are more intimately associated than appears on the surface. To be afraid of honorable work, or ashamed to do it, stamps a man a coward. But it does not need argument to show that the man who must spend his whole existence with sweaty brow, when that sweat will but bring him the bare necessities of existence, can never stand self-respectingly by the side of him who has had time and means to make the culture of the world his own. No; his evolution from the lower orders has not been carried far enough.

But that men have so often groaned under a load of debt has been due to the fact that their standard of living has been too high for the purse in their pocket. All experience shows that it is well-nigh impossible for any man or family to lower the accustomed standard of living. This being the case, men whose muscle cannot sustain that standard must train their minds to assist the lacking muscle. This is simply putting Mr. Agee's words into converse form. And this is a question of dollars and cents.

Mr. Parmlly shows that some employers think more work can be gotten out of college men. It is also true that college men can get more money out of the employers! Not to any great extent, while they devote themselves to manual labor. The man with college training has no right to do this; for unless his training shall be made to count in broader lines, it is nearly valueless in dollars and cents, and it has not paid him to go to college.

It is not as mere manual workers, but as employers that our boys should be considered when we ask, "Does college education pay for them?" And it is for the express purpose of fitting them the better to be employers as well as day-hands on their own farms, that the college course should be undertaken.

But will they return? Will they not rather become the employed in some clerical way, than the employers on farms of their own? And does it ever pay a father to give his sons such an education?

To the last, I say, seldom. The point is, will it pay for the boy? Very seldom is more than one boy wanted on the old place, especially after the marriages of the younger generation begin. But if it be wholly desirable that the boys return to farms—their own or their parents'—let this be seriously considered: The previous preparation cannot safely be all bookish, nor can the college work be all in the line of mere culture.

For in this case, what live interest can the young collegian have in the farm? The farm must have been something to him, and he must have put something of himself into the farm prior to his college life, if he is to return to it as a first love. And just here, I think, is the point of too common failure.

Let the boy's early life be not wholly a preparation for college. Let him be judiciously encouraged in everything that may grip him to the farm, as an ideal home, as a place for recreation, as a great field for interesting work. Let the picture of the ideal farmer, as a man of culture as well as of brawn, be faithfully imprinted upon his mental retina. These two efforts can be well-nigh simultaneous, but they may need a little more time than school work alone. Let it be so then; the boy will be the better for not having his college course too early in life.

But set aside the question of dollars and cents! Perhaps then none who have enough mental training to appreciate its value but will say this: No matter what the grade and grasp of his mental culture, it has paid in added self-respect and in the added respect of the world at large, or so much of it as has touched his life. Just the change in manner and address of a good student during a school course away from home is often almost too marvelous for belief. And there are not wanting those who affirm that even a good address is worth more to a lad than money in his purse.—C. S. Valentine, in *Country Gentleman*.

Agricultural Education.

The United States is better provided, so far as number is concerned, with colleges and advanced schools in which agricultural science in some form is taught, than any other country in the world. We have now at least one school in every State in the Union which is aided, under the Land Grant Act of Congress passed in 1862, with appropriations from a great fund created to encourage schools of science and agriculture. In by far the greater number of these schools of science, a distinct specialty is made of instruction in branches connected with agriculture.

In several of the schools agricultural education is not a secondary and incidental thing, but the chief purpose and occupation of the institution. Both the theory and practice of agriculture are taught in them.

Other acts of Congress have given aid to agricultural experiment stations established by the States, whose main purpose is to make scientific investigations and experiments connected with farming operations. The experiment stations are often connected with agricultural or scientific schools, and beside affording to farmers information likely to be directly valuable to them in their work, they form a part, in a general way at least, of a system of agricultural education.

A great deal has been done in the direction of the scientific training of farmers in the past thirty years; but the criticisms often expressed by American farmers, in their gatherings, indicate that many among them are not satisfied with the present condition of agricultural education.

It is certainly generally agreed among farmers that the successful agriculturist at the present day needs a scientific and practical education. The sciences of chemistry, geology, and botany lie at the very foundation of farming. Of course every good farmer knows a great deal of these sciences, as the result of his own and his ancestors' experiences, without learning them from books or professors. But the present age is the age of system and organization, and the farmer, seeing what has often been accomplished by really expert knowledge of sciences connected with agriculture, sensibly desires that his sons shall know them.

How great a science the successful practice of agriculture really is, may be gathered from the branches of knowledge taught in one great agricultural school. These include, besides English and mathematics, surface geology and agricultural chemistry, illustrating the qualities of soils and manures; anatomical and technical botany; physiology and anatomy, and veterinary medicine and surgery as applied to domestic animals; the principles of land-surveying, leveling and practical mechanics; agricultural economy and geography; and theoretical mechanics and elements of mechanism.

There is, indeed, no profession or trade which exacts so much of a man, or requires that his knowledge shall lie along so many lines, as that of the farmer. That our farmers are well aware of this is shown by the efforts which they have already made or sanctioned toward a general system of agricultural education.

But some of them object to a system of education which they believe tends to separate boys from the farm; rather than to wed them to it; and which may lead them to disdain putting their own hands to the plow when they have learned to direct others how to do it.

If the agricultural college really gives a young man a distaste for farming, or a preference for other occupation, or a distaste for engaging personally in the work of the farm, a grave mistake has been made. The best agricultural schools are those which combine actual farm-work with the proper instruction. In such schools the term of study extends over several years, instead of two or three, and the instruction is in the hands of men who are themselves not only educated men but trained agriculturists.

Most of the agricultural colleges and scientific schools with agricultural departments which receive aid through the Land Grant Act of 1862 were not intended to make farmers, but to enable young

farmers to obtain, if they wished, an education suited to their occupation. Their primary object was an intellectual and not a manual education. As a matter of fact, only about eight per cent. of their graduates take up the practice of agriculture.—*Youth's Companion*.

[Of male graduates from the Kansas State Agricultural College, twenty-four per cent are in practice of agriculture and nine per cent more are connected with agricultural education as teachers and experimenters, while others are in more extended study for the same ends. Only one and one-half per cent of graduates from institutions of learning, not agricultural, have given attention to agriculture.—E.D.]

Farmhouse Conveniences.

A newspaper correspondent has found an ordinary rural home supplied with the convenience of plenty of hot water for kitchen and bathroom. There is a cold water tank in the attic. This is filled from the rains upon the roof, or a force pump might be used to lift the water. A windmill does the same office on some farms. A box lined with zinc and holding some 25 gallons is mounted near the kitchen stove, higher than the stove. From the tank in the attic cold water is let into the kitchen tank or box by a faucet. A hole is cut into the stovepipe, and through it passes down a pipe which is coiled around on top of the oven of the stove just where the fire will strike it. This pipe comes from the bottom of the tank. Midway of the tank the return pipe enters, making a complete circulation of water within the coil. The tank must not be closed tight at the top, otherwise steam explosions might occur. Common galvanized pipe is used. If the kitchen range or stove has the arrangement called a water front, the only thing to do will be to open the holes already drilled and connect the pipe from the tank. Thus, with a little pipe, some elbow joints, holder and faucets, a zinc-lined box, and the use of drains, any farm cottage may be as luxuriously supplied with hot water as if it were a millionaire's mansion. In the twentieth century most farm houses will be supplied with city conveniences. The reason they are not so furnished now is not the lack of money so much as the lack of thinking and energy.

Farm Waste.

Prudence is as necessary, or even more so, in farming than in any other occupation. Farming implements will depreciate in their value much faster by allowing them to stand out in the open weather than when in actual use. The outside of an old shed, or under an old apple tree, is a very poor place to stow a binder from one season until the next. What is true of one implement is true of all. One of the greatest drains on the farm, and one of those which is most silent and unobserved, is the constant drain from the manure pile. You can trace the liquid juice from almost every barn-yard, sometimes for a quarter of a mile. Here you are losing your best fertilizer, and yet you complain of poor crops, or having to use so much commercial fertilizer. Save all of the ingredients of your barn yard manure by keeping it under cover until you haul it on your fields. I never heard a man advocate keeping manure out of doors that had ever practiced keeping it under cover and noted the results. These wastes no farmer can profit by, be he poor or rich.—*New Agricultural Era*.

An Independent Man.

The independent farmer should be the most cheerful man in the country during a general financial crash. By independent farmer we mean he who owns a quarter section of land unencumbered by mortgage. He may snap his fingers at failing banks, at silent mills and manufactories, at merchants without customers, at the world at large; and gathering his family about him he may proudly realize that on no one is he dependent, and that so far as their limited means will allow the people of town and city must dance to his music, or when payment ceases, then he may "hang up his fiddle and his bow."

To the farmer who is free from debt, the ebb and flows of finance is a matter of small consequence. He has no sleepless nights in a vain endeavor to formulate a plan by which he can raise the mortgage from the home. What matters it to him if storms do rage in Wall Street, or if the local banks do retrench; he owes no man on earth a cent and has no master to drive him to his work, or to the sacrifice of his possessions during such stringent times?—*Colman's Rural World*.

A Lesson of the Panic.

One of the most striking lessons shown by the panic is the intimate relation between capital and labor. The contraction of credit and the withdrawal of capital out of business throw labor out of employment. Although there may be quarrels between employers and employees, there can be no war between capital and labor. Their interests are mutual. To strike down capital is to strike down labor. The blow aimed at capital falls on labor. A clear recognition of this fact will tend toward the arbitration and peaceful settlement of all differences that may arise between employers and employees.—*Farm and Fireside*.

A college education has ceased to be a luxury. It is now an absolute necessity to every young man who would enter upon life with an unclouded prospect. Talk as one may about the superfluity of higher education, it cannot be gainsaid that its absence makes a successful man's progress less pleasant, even if it does not impede it very seriously. There is no wise young man who would refuse the opportunity of university study if he could get it.—*The Cloverleaf*.

FARM NOTES FROM VARIOUS SOURCES.

First-class cows can nearly always be raised at a less cost than they can be purchased.

From beginning to end, the most money is in the finest quality produced.—*Farmers' Home*.

The man who has not enough humanity to make his stock comfortable will not make a good farmer.

Breeding from animals that have mean dispositions for a few generations establishes the trait with them.—*Farmers' Home*.

Hedge rows are attractive if trimmed and shaped, but if neglected they are nuisances that give the farm a dilapidated appearance.

If you want to get the full capacity out of your horses, without injury, use moderation at the beginning of the task to be done.

Growing animals must consume sufficient food for growth of flesh, bone, and muscle, besides maintaining the natural waste of the system.

Good stock looks better, pays better, and with good treatment, thrives better than scrubs, and it always pays to put feed into stock that gives the best returns.

Do not look far away from home for the chances to make money in specialty farming. The same opportunities exist right where you are that you think can be found a thousand miles away.—*Farmers' Review*.

To be most successful with farm work, it is absolutely necessary to give care to the details. The evidence of loss in small things will prove an important factor in making the farm most profitable.

Young men on the farm are circumstanced in many respects much as are the great majority off the farm. They have a future, and it depends very much on their own efforts what it shall be.—*A West-ern Paper*.

There is not a farmer anywhere who can afford to be without a good agricultural journal. The constant forward movement in methods and practices will leave him hopelessly behind unless he has this to keep him posted.—*Rural Canadian*.

The profit from a given crop does not depend wholly upon its size and quality, but also on the cost of production and the expense of marketing. Thorough cultivation will reduce the first item and good roads the second, and these in combination will make many crops profitable that are not so now.—*Farmer's Home*.

There are many good farmers who make the mistake of imagining that all the money spent in making the home beautiful and comfortable is so much lost, and they will invest thousands in barns and conveniences for stock and stock feeding, and keep their families in cramped and uncomfortable quarters.—*Prof. W. F. Massey*.

If farmers and their wives would make a way for more home amusements for their children there would be less leaving of the farm and flocking to the cities for employment by the youth of our land. We must take time to live in this fast age—to live, in the highest sense of the word, in the enjoyment of those things for which the noblest part of our being yearns.—*Jennie Oaks*.

Wheat will in future occupy a more prominent place than heretofore in hog feeding because it has been found to be a better all-round food for growing pigs than corn. The price of wheat will measurably regulate this, however, even though a more profitable feed, because of the facility for handling and the fact that it generally commands a cash market. It contains three or four times as much bone and tissue-forming constituents as corn, and is, like milk, a better all-round food.—*Colman's Rural World*.

The merchant of old days was subjected to periods of great anxiety, but now the head of a great commercial house must exercise an almost sleepless vigilance. The markets of the world are put before him anew every morning, and any evening may bring conditions which seriously alter his calculations. The engineer of a high-speed engine, rushing forward upon his daily run with his hand upon the throttle valve and his eye fixed upon the track before him, is a fairly good type of all managers of business enterprises.—*Christian Register*.

Hard times and low prices should not lead you to relax your efforts to improve the stock. It is just at such a time that you need the very best stock that you have, if you expect any profit from it. This is particularly true as regards horses, for now the scrub, or the small, no-purpose horse, hunts in vain for a buyer, unless said buyer can make his own price; but the good horse, the one which will make a useful servant for the man who has business to do, whether times are good or bad, or the fine coacher which is wanted by the man who can afford to pay, so long as he gets just what he wants, still has its value, and the seller can say what that value is.

As the merits of ensilage become more generally recognized, the profit from winter feeding is increased, and small farms are enabled to maintain more stock. Young stock can be kept growing through the season at small cost, where without it they would either stand still or make their growth at a serious cost. In using ensilage for beef cattle, it should be fed with grain, oil, and straw, or a little hay. In this way a rapid gain of flesh can be procured at small cost. For dairy cows, it should be fed with corn meal and bran. For horses it should be used sparingly, as full feeding upon it sometimes induces colic, but it may be safely used to some extent in connection with grain and hay.—*Farmers' Home*.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

The attendance to date is 420, and still growing.

Prof. Mayo is investigating a peculiar disease among cattle, near Wakeeney, this week.

Regent Secrest addressed a meeting at College Hill school-house last evening on "A Plea for Popular Government."

The Farm Department has a few bushels of Currell wheat yet unsold. Price \$1.50 per bushel, sacked and delivered at depot.

The contract for construction of the new boiler house and stack was let on Monday last to Mr. Hederman of Topeka for \$5,910.50.

Prof. Walters addresses a meeting at Grant school-house this evening on "Some Educational Deficiencies of the Working Classes."

A Shorthorn bull and a Shropshire ram lamb are offered for sale by the Farm Department. Write to Prof. Georgeson for particulars.

Regents Wheeler and Secrest were at the College on September 12th and 13th in a meeting of the Committee on Buildings and Grounds.

Prof. Georgeon's house has been generally renovated this summer by a new roof on the west wing and new paper in the halls, parlors, and chambers throughout.

With five exceptions the employes of the College have visited the World's Fair this summer in force, taking such time as was convenient in the different departments.

President Fairchild is having the heating apparatus in his dwelling remodeled at his own expense, the appropriation for general repairs being insufficient to cover these needed expenditures.

The brother of Prof. White, whose serious illness called the Professor to Washington just before Commencement last June, after living through the summer with occasional hope of recovery, died on September 7th of consumption, and was buried near his parents in Alexandria.

The course of weekly lectures upon economic subjects, announced some weeks since, will begin some time next week; the exact date will be announced in the city papers. It is proposed to have these lectures in the evening and open to the public, hoping that our citizens, as well as students, may gain the benefit.

Prof. Lantz occupied the public hour yesterday afternoon in explanation of the Dewey decimal system of library classification recently adopted at this College. The new classification has resulted in many changes in the location of books, as shown by the following outline of divisions and sub-divisions:

000 GENERAL WORKS	500 NATURAL SCIENCE
010 Bibliography	510 Mathematics
020 Library Economy	520 Astronomy
030 General Cyclopaedias	530 Physics
040 General Collections	540 Chemistry
050 General Periodicals	550 Geology
060 General Societies	560 Paleontology
070 Newspapers	570 Biology
080 Special Libraries	580 Botany
090 Book Rarities	590 Zoology
100 PHILOSOPHY	600 USEFUL ARTS
110 Metaphysics	610 Medicine
120 Special Metaphysical Topics	620 Engineering
130 Mind and Body	630 Agriculture
140 Philosophical Systems	640 Domestic Economy (mercer)
150 Psychology	650 Communication and Com-
160 Logic	660 Chemical Technology
170 Ethics	670 Manufacturing
180 Ancient Philosophers	680 Mechanic Trades
190 Modern Philosophers	690 Building
200 RELIGION	700 FINE ARTS
210 Natural Theology	710 Landscape Gardening
220 Bible	720 Architecture
230 Doctrinal Theology	730 Sculpture
240 Devotional and Practical	740 Drawing and Designing
250 Homiletics, Pastoral	750 Painting
260 Church, Institutions, Work	760 Engraving
270 Religious History [Sects]	770 Photography
280 Christian Churches and	780 Music
290 Non-Christian Religions	790 Amusements
300 SOCIOLOGY	800 LITERATURE
310 Statistics	810 American
320 Political Science	820 English
330 Political Economy	830 German
340 Law	840 French
350 Administration [tions]	850 Italian
360 Associations and Institu-	860 Spanish
370 Education [tion]	870 Latin
380 Commerce and Communica-	880 Greek
390 Customs, Costumes, Folk-	890 Minor Languages
Lore	
400 PHILOLOGY	900 HISTORY
410 Comparative	910 Geography and Description
420 English	920 Biography
430 German	930 Ancient History
440 French	940 Europe
450 Italian	950 Asia
460 Spanish	960 Africa
470 Latin	970 N. America
480 Greek	980 S. America
490 Minor Languages	990 Oceania and Polar Re-

GRADUATES AND FORMER STUDENTS.

R. S. Reed, '92, is a teacher at Cedar Point.

M. W. McCrea, '93, is teaching at Bostwick, Neb.

John Davis, '89, is Principal of the High School at Beloit.

Lillian St. John, '91, is teaching the Harmony school, near Riley.

E. J. Abell, Fourth-year in 1892-3, is located at Stuart, Smith County.

Scott Moore, Second-year in 1891-2, visited College friends the first day of the term.

H. A. Darnell, '91, called at the College last Saturday. He is teaching at Pavillion.

J. H. Criswell, '89, called at the College yesterday, about to start for the World's Fair.

W. H. Olin, '88, is one of the Executive Committee of the State Teachers' Association.

H. R. Phillips, student in 1891-2, is farming with good success near Diamond Springs.

W. H. Edelblute, '92, writes from Farmington, Washington, of success in teaching.

Tina Louise Coburn, '91, teaches a second year in the Everett School of Kansas City, Kansas.

C. E. Freeman, '89, has entered the new Armour Institute at Chicago for a special course.

Elizabeth Stingley, Second-year in 1889-90, is in training for hospital nurse at Kansas City.

J. M. Harvey, Jr., student last year, is the Republican nominee for Surveyor of Riley County.

J. E. Payne, '86, will spend this College year in post-graduate study of Agriculture and Botany.

C. E. Davis, Second-year in 1889-90, is a book-keeper for an electric machine company in St. Louis.

E. M. Paddleford, '89, is a student at Baker University, and will graduate with the class of '94.

W. H. Steuart, Third-year 1892-3, is time-keeper for Ulrich Bros. in the construction of Science Hall.

Sam Kimble, '73, is nominated on the Democratic ticket as candidate for Judge of the Twenty-first District.

H. L. Pellet, '93, spends a few weeks at the College. He is the Populist nominee for Surveyor of Johnson County.

C. H. Thompson, '93, accepts the place of assistant in Washington University, Shaw School of Botany, St. Louis.

R. J. Brock, '91, has entered into partnership with Sam Kimble, '73, for general law practice in Manhattan.

Clay E. Coburn, '91, is an accountant in the office of the great Armour Packing Company of Kansas City, Kansas.

Lottie J. Short, M. Sc., '91, has begun work as Instructor in Domestic Economy at the Storrs Agricultural School of Connecticut.

Margaretha E. C. Horn, '93, spent the month of July at the World's Fair as one of the attendants in the Kansas Educational exhibit.

S. A. McGinniss, Second-year in 1888-89, was a member of the Court Martial, K. N. G., which tried and convicted Col. Hughes.

L. A. Waters, Third-year in 1892-93, was married, August 30th, to Miss Mattie Chapman, of Emporia. Mr. Waters is teaching at Alida.

The name of W. E. Whaley, '86, appears as Principal of the High School in a neat manual of the Salina public schools, just received.

D. W. Working, '88, writes from Fort Collins, Colorado, where he holds the responsible place of Secretary in the State Agricultural College.

A. Dickens, '93, is attendant in charge of the educational exhibit of Kansas at the World's Fair during September. His school begins October 2nd.

Minnie Reed, M. Sc., '86, is spending a few days at the College awaiting the completion of repairs on one of the school buildings in Argentine where she is to teach.

Gertrude Coburn, '91, has begun her third year as Instructor in Cooking in the Stout Manual Training School of Menominee, Wis., with a liberal advance in salary.

R. J. Brock, '91, was made Chairman of the Committee on Resolutions at the Riley County Republican Convention. F. A. Marlatt, '87, was a member of the Committee.

S. L. Van Blarcom, '91, is still clerk in the Railway Mail Service between Kansas City and Newton on the A. T. and S. F. Railway, with headquarters at Kansas City, Kansas.

Herbert Roberts, Third-year in 1888-9, who graduated from the Northwestern University Law School, at Chicago, last spring, has accepted a position in the law office of Austin & Austin, Kansas City, Mo.

A. T. Blachly, the bank cashier who was recently shot and killed by robbers at Delta, Colo., was a younger brother of Dr. Blachly, of this city. Some twenty-five years ago he was a student at the College.—*Republic*.

Fannie E. Waugh, '91, attended the Waugh-Vail wedding last week, and greeted her many friends at College. She will remain at home in McPherson

till spring, when she hopes to spend a few months at College in post-graduate studies.

Amos E. Wilson, class of '78, was in the city last week, examining the First National Bank. The administrator's axe has not yet reached him and indeed should not, for he is an exceptionally competent officer.—*Republic*.

Frank W. Coe [Third-year in 1889-90], who graduated at West Point last June, stood third in his class, which is considered a high honor. He is in the artillery branch of the service, and stationed at Washington, D. C.—*Republic*.

Mr. Frank C. Burtis, '91, and Miss Louise Daly, '93, were married, September 3rd, at the home of the bride's uncle in Dana, Indiana. They are at home in Manhattan, where the groom is employed as Assistant Agriculturist in the Experiment Station of the College.

A. D. Cozad [Second-year in 1887-8], son of Mrs. S. Whitney, well known on College Hill, has purchased the job printing establishment in Kansas City, Kas., where he has been working for several years. He was aided by his brother, Prof. Norris, of dog show fame.—*Republic*.

The marriage of Mr. F. A. Waugh, '91, to Miss Alice Vail, '92, is announced. The ceremony was performed on Tuesday, September 18th, at the residence of the brides' father in Manhattan, Rev. Mr. Drake of the Congregational Church officiating. The young couple left the same day for their home in Stillwater, Ok., where Professor Waugh fills the chair of Horticulture in the Oklahoma Agricultural College.

Resident graduates are not quite so numerous as last year, but many are pursuing post-graduate studies elsewhere. The following, some of whom are more or less employed at the College, are pursuing courses of study also: Phoebe E. Haines, M. Sc., '83, J. E. Payne, '87, Lora L. Waters, M. Sc., '88, F. C. Burtis, '91, Mary Cottrell, '91, Grace Clark, '92, F. C. Sears, '92, Ruth Stokes, '92, Laura Day, '93, Margaretha E. C. Horn, '93, H. L. Pellet, '93.

The following students of former years have returned to continue a course of study after more than a year's absence, entering the classes named: Fourth-year—Phoebe Turner; Third-year—G. Doll, G. W. Fryhofer, Nora Fryhofer, H. Haistead, Hortensia Harman, C. V. Holsinger, C. D. McCauley, F. E. Rader, Mabel Selby, W. T. Taylor, W. E. Thackrey, and J. C. Wilkin; Second-year—C. Farman, S. M. Hanlon, Hattie Paddleford, Inez Palmer, and G. C. Wheeler; First-year—G. R. Hopkins.

Bertha L. Kimball reports a reunion of students at the Kansas Building, World's Fair, August 25th, with the following persons present: Misses Ella Child, Ruth Stokes, Lora Waters, Bertha Kimball, Florence Beverly, Jessie Whitney, Winifred Westgate, and Messrs. F. C. Burtis, C. A. Kimball, C. J. Peterson, G. W. Wildin, G. K. Thompson, E. M. S. Curtis, E. R. Burtis, B. M. Brown, A. L. and E. L. Frowe, P. E. Westgate, W. Curtis, James Sutton, and W. Harling. Miss Harper was also present.

A Second Steer-Feeding Experiment.

Bulletin No. 39, bearing the above title, is being mailed. It recounts experimental feeding of twenty native steers in five lots from November 27, 1892, to April 29, 1893,—a period of five months,—and is illustrated with six photo engravings. Results are summarized as follows:—

1. The steers fed on the balanced ration gained more rapidly than any of the others, they were in better market condition and brought a higher price than any of the others, and they consumed less food per pound of gain than the others, all of which confirms the results of last year. But these factors do not necessarily imply the most profit, as the account proves.

2. A mixture of molasses and corn meal proved to be a very inferior fattening material.

3. The exclusive diet of oil cake did not yield as good results as either the balanced ration or corn. The animal organism appears to be unable to make use of so highly concentrated nitrogenous feed to good advantage.

4. Ear corn fed in the barn did not produce as good gains as did the balanced ration fed under the same conditions, but, being a cheaper feed, it proved to be slightly more profitable.

5. The steers fed ear corn out of doors gained at practically the same rate during the experiment as those fed ear corn in doors, but they ate 2 pounds corn and 1.5 pounds fodder more per pound of gain than did the in-door steers. This confirms the results of last year.

6. Steers which are tied up in the barn, if not accustomed to this method of handling, will fret under the restraint for several weeks, during which time the gain is but light for the feed eaten. From this we conclude that good shelter is favorable to economical feeding, but it should not put the steers under restraints to which they are unaccustomed.

On our first visit to the Agricultural College at Manhattan this week we found the faculty, students, and employes about the grounds and buildings uniformly courteous, accommodating, and sociable; and the citizens are no less so. They are justly proud of their grand institution. At some future time we intend to give it a more extended write-up. For the present, we can only say that we were greatly surprised at its magnitude.—*Westmoreland News*.

COLLEGE ORGANIZATIONS.

September 16th.

The Vice-President of the Websters being absent, J. Stingley was called to the chair, and occupied it with due credit during the first session of the Webster Society for the ensuing year. Roll-call showed that quite a number of the Websters were present. I. A. Robertson lead in prayer. After the reading of the minutes of the last session, the programme for the evening was opened with an essay, entitled "Discontent on the Farm," by F. J. Smith. Mr. Smith pointed out to the Society many things which showed clearly the cause of much of their so-called discontent. He then offered several good suggestions, which if followed would do away with much of their discontent. J. V. Patten's quartet sang a rather amusing selection, but refused a hearty encore. J. M. Williams then read a selection entitled, "The Little Revenger," by Tennyson. The selection was a good one and well rendered. Volume 24, No. 1, of the Webster Reporter was edited and read by F. W. Ames. Mr. Ames in his genial and characteristic manner presented a first class edition of the paper. The remainder of the programme was then passed, and the Society next turned its attention to the election of its officers for the Fall Term. F. W. Ames was unanimously chosen President, and in the same manner F. J. Smith Vice-President. I. A. Robertson was chosen Recording Secretary; W. A. Cavanaugh, Corresponding Secretary; J. M. Williams, Critic; J. B. Dorman, Treasurer; E. C. Trembley, Marshal; and Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick were elected members of the Board of Directors. Society adjourned 10.30.

F. R. J.

September 16th.

The first session of the Hamiltons was called to order promptly at eight by Vice-President Jones. W. H. Painter was appointed Recording Secretary. Roll call. Prayer, F. A. Dawley. The minutes of the previous meeting were read and adopted. Next under the head of election of officers the following were elected for the Fall Term: President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, Joss, Holsinger, Sandt, Painter, and Barnett. The election of officers having taken up so much time, the program of the evening was dropped. The names of Messrs. Noble, Farrat and Marty were proposed as members. After unfinished and new business was disposed of, the Society was favored by very interesting talks by A. D. Rice and J. L. McDowell, honorary members. Under the head of extemporaneous speaking, the question, "Would Woman Suffrage be an Aid to Good Government?" was fully discussed. Report of Critic. Adjournment.

R. J. B.

September 15th.

The opening session of the term found a goodly number of Alpha Betas awaiting Vice-President G. L. Christensen's presence in the chair. All joined in singing one of our chapel hymns, Miss Steele presiding at the organ. The Society was led in prayer by Miss Havens, who asked for divine blessing on our work during the coming term. Miss Jennie Smith then gave a select reading, "How He Saved St. Michaels," and this was followed by Miss Havens with an essay, "Preparation for Society Work." C. C. Smith presented a well-filled "Gleaner," which began with a general welcome by A. E. Ridenour, and ended with a happy selection from "The 'Gleaner' Gleaned." Much practical advice was interspersed through the remaining articles. After an intermission which furnished an opportunity for greeting the old friends and for making the acquaintance of newcomers,—an opportunity not neglected,—the Society listened to some instrumental music. Then began the interesting task of selecting officers for the ensuing term. G. L. Christensen received the unanimous vote of the Society for President. Other offices were filled as follows: Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. W. Limbocker. The Directors elected for the year were W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Relieved from the strain of this responsibility, the Society hurried through the ordinary business and adjourned to congratulate the officers-elect.

W. H.

The Farm as a Training School.

It remains true even today that the farm is the chief and the best school that exists in the country for the training of capable men. It is otherwise in Europe, where one does not find a class corresponding to the independent American farmer. But with us the farmer is a superb trainer of boys. His lads are learning real things, while the town boys too often are merely studying in books the pale reflection of things.

The farmer boy knows early about land and soils; about crops and their rotation; about the seasons and the weather and the signs of the sky. He grows up in familiar acquaintance with animals. He owns a dog, he has a favorite horse, he rides wild colts, he feeds the horned cattle. He helps in planting and in harvesting. He is usually versed in wood lore, and knows trees and plants, birds, squirrels, rabbits, and ground hogs. He hunts with a gun and goes fishing. He develops superb health. He helps repair the fences. He learns about tools and masters the complexities of farm machinery. In short, the range of his practical knowledge becomes great.—Albert Shaw, in *Review of Reviews*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Wichita pays the Superintendent of her schools a salary of \$2,500.

The first meeting of the Riley County Educational Association will be held at Riley, October 21st.

A number of Riley county teachers are urging the establishment of a teachers' library.

College Life announces the death of Prof. Emanuel Vrichter, from 1886 until recently teacher of modern languages at Emporia College.

Mrs. Sarah Burdick, of Hortonville, last week gave \$2500 to the Seventh Day Baptist College at Minneapolis.

Prof. B. S. McFarland has been elected Principal of the public schools of Olathe. The Professor held the position twenty-three years ago.

Prof. H. W. Charles, who for the past eight years has been the very efficient principal of the Sedgwick public schools, steps into the superintendency of the public schools at Washington.

In the inter-state oratorical contest Illinois was first; Wisconsin, second; Ohio, third; Indiana, fourth; Kansas, fifth. The Kansas man, Mr. W. C. Coleman of Emporia, received first on thought and composition.

The State Board of Charities has decided to buy a car load of the best grade of Holstein cattle, which will be placed at the State Reform School, three miles north of Topeka. Nearly all of the charitable institutions have from five to fifteen cows, but the new Board is of the opinion that they can be improved on, and will experiment with Holsteins.

The Riley County *Educator* says: "A large number of teachers have attended the Columbian Exposition during the summer, and still others are preparing to do so. Too much cannot be expected of them, however, for it must be remembered that the person who teaches at \$35 a month for six months in the year has less money at the end of her year's work than does the servant girl who receives \$2.50 a week the year around. It is safe to say that not a teacher in the county would miss this opportunity of a lifetime if she felt financially able to avail herself of it."

The American Book Company began suit in the United States Circuit Court last week to secure a judgment of \$13,275 against Prof. O. C. Hill of Hiawatha, the well known school man. This amount, says the petition, was paid to Mr. Hill for three school-books that he sold to them as original and expended for the printing and distribution of the books. The company now makes the claim that the books contain a large amount of matter that has been plagiarized from other books already copyrighted. Such accusations against a man so well known and who has taken such a leading part in Kansas educational matters will not be believed by his many friends until he has had a hearing.—*Lawrence Journal*.

The twenty-seventh annual meeting of the Kansas State Horticultural Society will be held at Holton, Jackson county, on Tuesday, Wednesday, and Thursday, December 5, 6, and 7, 1893, in response to an invitation from the local Society. Free entertainment will be afforded to all delegates and horticulturists in attendance from abroad, and it is expected that all railroads and connecting lines running into that city will grant the usual reduction in fare. A program of proceedings will be issued in due time and mailed to persons on application. To this meeting the friends of horticulture are most earnestly invited, and will be most cordially welcomed to all the privileges of the sessions. Papers and reports by committees will be prepared for the occasion upon subjects of interest to all and vital importance to the success of the industry in the State and each will be open to a full and free discussion by all persons in attendance. For information, address G. C. Brackett, Secretary, Lawrence, Kansas.

The State University now comprises five schools; occupies nine buildings; has a faculty of 45 members; a student enrollment of 750 (last year) exclusive of University extension students; has a library of almost 20,000 volumes; collections in natural history containing more than 150,000 specimens; a campus of 40 acres, another of 10 acres, and a sports field of 12 acres, and has an annual income for current expenses of almost \$100,000. The grounds and buildings are estimated at \$504,000, the apparatus of instruction at \$261,000. No preparatory department is maintained, but 75 Kansas high schools fit students for admission to the freshman class. The Faculty has undergone some changes since the close of the last academic year. In the school of music, Mr. Joseph Farrell will succeed Herr Dome Geza as violinist, and Mr. and Mrs. A. H. Clark will have charge of drawing and painting and vocal culture. Mr. V. L. Kellogg has been granted a leave of absence, and his place as instructor is supplied by Mr. Will Snow. Mr. Fred McKinnon is the Chancellor's private secretary. Mr. E. C. Franklin has been allowed a year off, and his place will be taken by Mr. F. B. Dains, of Middletown, Conn. Prof. A. S. Olin is added to the Faculty to instruct in pedagogic lines.

All specialties which are lauded as offering the high road to fortune should be tested on a small scale before plunging into them. Under certain conditions they may be all that is claimed, but these may not be your conditions. Diversification of crops is the safe rule for the average farmer. This will make him acquainted with the comparative value of many crops, and then if he wishes to choose a specialty he has his own experience to guide him.—*Rural Canadian*.

Luck or Reason.

Whenever you hear a dairy farmer complaining of ill luck and a lack of profit, take off your hat, where-in you have of course pasted the following, from John Gould's address to the agricultural students of Ohio University, and read it to him:—

"To obtain successful results in the future we must find out whether we are being injured so much by competition as by our own failure to comprehend and push to its limit the productive quality of our dairies."

One word more: Tell him that there is not a single instance of a dairy farmer who has made a progressive success of his work, who has not turned that very search light on himself that Gould speaks of. If he still persists in shedding admonition as a duck sheds rain (and these ill-luck fellows are great for that), tell him to go ahead, and leave him with Ben. Franklin's adage as a parting shot: "Experience is a dear school, but fools will learn in no other." What cowards this idea of "luck" makes of all of us. We outrage a kind Providence and manly human nature, both, by giving it a lodgment in our hearts. Reason, reason, not luck, lies back of every event in the universe. To know the reason of things is the true purpose of man's intellect. Luck is the gambler's deity. —*Hoard's Dairyman*.

MANHATTAN ADVERTISEMENTS.

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PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

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THE INDUSTRIALIST.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

TRUE OBJECTS OF STUDY.

BY PRES. GEO. T. FAIRCHILD.

PARTICULAR reasons for study of particular subjects occur to all students, and most of us are led by these into a broader field of inquiry. Every person has need of some slight calculation and is led into the interesting study of numbers by this little need—a need that becomes larger as he advances. For this reason all schools find room for arithmetic, and most advance into general mathematics. Words have their uses for every child, and so language studies begin and grow with the child's need for mastery of his mother tongue, of his neighbor's language, of the world's language.

A similar progress of growth in need for study has marked every subject of thought. The sciences have all had their birth and development in some one's need of larger experience, more facts, truer relations of facts, more general principles,—in short, clearer, more exact knowledge of self and surroundings.

But now a vast accumulation of knowledge meets the youth at the very threshold of thinking. His study must apparently come in advance of his needs. His question is not What do I need today? so much as What shall I need in the particular life of my choice or my fate? In the array before him he cannot select by experience, for he has none; he cannot select by example, for his life cannot be an exact copy of anyone's; he cannot select by fore-knowledge of his particular wants, for such fore-knowledge is not human; he cannot apply to experts to furnish knowledge ready made, for the knowledge he needs is purely personal, a growth in an individual mind. What must he do to put himself in the way of gaining the best use of himself and his opportunities?

In answering this question, he will think most wisely if he regards his own development as a thinking, reasoning being. The older men grow the more thoroughly they learn the lesson that true knowledge comes from accurate thinking, and all wisdom is correct thinking put into action. The first true object of study, then, in all cases is a growth of the thinker who is to do the work of making his way in the world. That kind of study which awakens most interest in thinking, and keeps the student most diligently at thought, gives best results for the time employed. What this study should be can be decided best by knowing what has been the past growth of each individual, and the teacher will try to adjust whatever lessons are given to the thinking capacity of the student. For the same reason a student should not advance beyond his growth in thinking, nor should he turn back to review too often what he has already mastered in thought.

A second true object of study is accurate information, as the material of thought. In the very nature of the case such information, upon any subject whatever, can come only to minds already sufficiently cultivated to comprehend it. It is folly to try to cram oneself with facts in engineering, for instance, before the engineer's judgment is capable of giving such facts their place in plans and principles. So far as such facts are available as a means of training the judgment, they are the most useful means of training; but they can stand in true training only in connection with the first object of the training. So no subject can be learned simply by reading about it. The reader must have trained his judgment along the lines of his reading by solving many questions of comparison and relations of cause and effect. The "best read men may be the least trained in their specialty, if they have read without development of judgment." Their mass of information is a cyclopedia for use of better thinkers.

A third true object of study is to put oneself in sympathy with the growth of the world in tastes and wants and abilities. The actual welfare of any person is measured by the amount of satisfied wants. He must therefore grow in wants as well as in ability to meet wants. A savage is not happier in the grand array of comforts afforded by civilization. A child cannot be better off for a library of rare books which he cannot appreciate. The culture of schools is most evident in the direction of making all things more useful to humanity through cultivating human capacity to enjoy.

A farmer thirty-two years old left his farm to gain a college education, and graduated at thirty-six. Some ten years later, when asked the question, "Did it pay?" he answered, "If you mean Did it pay in dollars and cents? I think it did. I think I have more wealth than I would have had without the training.

But if you mean, Did it pay in all that makes wealth and life worth having? I answer yes! a hundred fold."

All study has its true objects in making most of the man and of his opportunities in life by giving him ability, through judgment, knowledge and tastes suited to his age, to live a larger life.

DISCONTENT ON THE FARM—SOME OF THE CAUSES AND CURES.

BY F. J. SMITH, '95.

THERE seems to be, as much as ever, a tendency for farmers' boys and girls to quit the farm, and to take up the to them seemingly more pleasant occupations of the city. True, all the boys and girls that happen to be born on the farm cannot be expected to be farmers or farmers' wives. Yet, as it is, there is a large per cent of them leaving the farm for the city, simply because the life of a farmer seems to them a life of drudgery.

In view of this fact it is well to inquire into the matter, and find out if we can if their occupation as farmers is made as pleasant as it might be. On investigation we find that in many cases they have a just cause to be dissatisfied. We find that in many instances they really lead lives of drudgery. All that the future seems to have in store for them is work. However, it is the character of the work and the way in which it is carried on that does the mischief; for no farmers' children of at least medium intelligence and "get up" ever expect to get along in life without working.

Many fathers and mothers are caused a great deal of anxiety by the discontent manifested by their children. Now, I believe if these parents would ask themselves a few questions the key to this might be found. The father might ask himself, "What am I doing to interest my boys in the crops they help to cultivate? Do I make them feel as though they were partners in the business?" I truly believe if a father having a discontented son would take some such questions to heart and study them, he would find that his boys were treated little better than slaves, simply working for their board and clothes. Every farmer could give his boys a certain share of the crops, or perhaps let them have a small field for themselves. This may seem to some absurd, yet I have seen it tried, and have witnessed how proud it makes the lads to point to their fields, or with what pride they cared for the colt, the calf, or perchance a few pigs which the father has given them for their own. These to the average farmer are but trifles, but in their power to teach boys to love their work, they are mighty.

The mother might ask herself, "Am I giving my girls a share in the chickens we raise, the butter we make, and the garden we are wont to work together?" The mother, too, very often finds that her daughters are receiving really nothing that would make them feel as though they had joint interest in the work.

Then again, they might jointly ask themselves, "Are we giving our children the educational advantages afforded children of the city? Do we keep them supplied with good wholesome reading matter? Do we in every way give them the chance for enjoyment of life which might be given them?" Alas! many parents, if they are honest with themselves, will be compelled to answer to these questions, no.

Now, in the face of these facts, is it any wonder that children become discontented and discouraged with farm life? Certainly not; they would be un-American if they did not become dissatisfied.

And then, after finding where a home might be improved, it is the parents' duty to make such improvement. For instance, they might give the children a good, liberal education, such as is afforded by this and similar institutions. They might give them a day off occasionally for recreation, an evening upon which they might invite in their young friends to have a good time socially or allow them at other times to visit the neighbors for the same purpose. They can give good books and papers to read, and by reading themselves teach the love of them. Youth should be furnished with musical instruments of some kind, and encouraged in the study of music, both instrumental and vocal. The house and yard should be beautified with flowers and shrubs. There are, I believe, no two other things which add as much to the attractiveness and elevating qualities of a home as music and flowers, and there is no reason why every home should not be supplied with both. These things are too often neglected and many fathers themselves work as if all hinged on the ac-

quirement of the "almighty dollar." For such, there is, of course, no time for social enjoyment, no building up of the intellectual man save in one direction. Above all, then, it becomes necessary for the father and mother to live as though there were something higher than the acquirement of wealth; and until they do this, and thereby set an example for their children, there will be discontented farmers' boys and girls.—*Essay before the Webster Literary Society.*

Agricultural Education.

Some points of interest relative to the educational discussion can be found in a thoughtful paper by Prof. Shaler of the Board of Agriculture [Massachusetts] in the August *Atlantic Monthly*. Professor Shaler argues for the same point that *Our Grange Homes* has been contending, that the young man should have a good general culture as well as a technical training. He says there is danger that technical institutions may become narrow in spirit, seeking not to develop their pupils to a full measure of their natural abilities, but to train them at once to do particular tasks, adding: "In general it may be said that the more fit the youth is at graduation for the details of a special employment, the less likely he is to have a broad foundation on which his subsequent development must to a great extent depend."

He also says: "I think that any system is injurious which deprives a well meaning youth, whose parents can support him until he is twenty-one years old, of this precious opportunity for enlargement which is certain to be unattainable in later life. While there doubtless is such a thing as dissipation of energy on the part of a brain worker, it is tolerably clear that the intelligence, like the body of a man, is at its best an intricate and complex growth in which each healthy organ or function helps every other. The blacksmith needs a strong arm, but also a patient back, a quick eye, and a ready judgment. The narrowing quality of many occupations is a source of danger in our democracy which will tend to disappear before a spirit of culture that recognizes all the well-trained intellectual service of mankind as in equal measures dignified and honorable. This end can be attained only by culture on a common ground."

To offset this is the idea of a great practical farmer who called at the office of *Our Grange Homes* a few days ago and expressed the opinion that a young man who intended to be a farmer should be educated in nothing but the requirements of agriculture. "He should know nothing but simple farming," said that practical farmer, "for in that way he can be kept upon the farm, and will have no temptation to leave it for other occupations." It seems to us that such a plan is narrow and belittling to the cause of agriculture, which is too important and too noble a calling to be insulted by claiming that it should be followed only by ignorant people. But in the two quotations above we have a sample of the practical farmer arguing for ignorance and the theoretical college professor arguing for an educated class of agriculturists.

It must be admitted that some prosperous, hard-headed business men deride the general-culture idea and say that boys should be put to work in their several callings in the early teens. This has been emphatically stated by Messrs. Carnegie, Eben Jordan, and others in various newspaper symposiums. But we believe such a course would produce narrow, one-sided men. On the other hand, such a man as Richard A. McMurdy, President of the Mutual Life Insurance Company, says: "If money-getting and money-grubbing are the real goals of success, the only objects to strive for, then put the young man into the grocery-store immediately and let him grind. But if a man is to be an all-around man, if the object to be attained is success in its all-around sense, then no branch of knowledge should be neglected. If success means ability to handle large topics in a large way, the elevation of the individual, and humanity as well, then no education can be too large, too broad, too deep."—*Our Grange Homes.*

"The Golden Hoof."

The Spanish shepherd called the hoof of the sheep "the golden hoof" because land pastured to sheep constantly increased in fertility. This simile was brought to our mind the other day by hearing a farmer say that his farm had never been gnawed to death by sheep running over it and eating the grass to the roots. It is a fact that there is no class of farm animals so beneficial to a rundown farm as sheep. They are great grubbers, and will utterly destroy all bushes and briars that grow in fields where they have the run. They are not heavy enough to pack the soil in a wet time, and their droppings are distributed evenly over the surface in such a manner as to promote rather than retard the growth of grass. They always seek the highest point in the field to sleep, and this causes the deposit of more droppings there than any other place, and as high places are usually the poorest this is an advantage. In fact, the man who thinks sheep a detriment to fertility is not up to the times by several hundred years. It would be a much more difficult matter to make farming a paying industry in some of our States without the presence of sheep than it now is, and in the hill countries it is hard to see how farming could be carried on if sheep were not kept in considerable numbers. In the hill counties of Ohio the farm that has sheep on it can usually be selected by the passing stranger from its general appearance of fertility, and there are few farmers in that section who will not stand up for sheep as promoters of fertility. Although sheep are not as profitable stock as they were a few years ago, they have a place on the farm that cannot be filled by any other animal, and with the great attention that is now being paid to increasing the mutton qualities, as well as the weight of fleece, the future for the shepherd is not at all dark.—*Farm News.*

Successful Farming.

I suppose it would be impossible to find a young man who is about to make his first venture in business in whatever line it may be, who, if questioned, would not say, unhesitatingly, he expected to succeed. That very many who venture do not succeed is certain, and it may not be altogether unprofitable to note some of the causes of failure. We learn from statistics that over 90 per cent of those who engage in mercantile pursuits fail, sooner or later. I have not at hand data to furnish full reasons why this is so, but from observation I believe one need not look further than two simple ones, in most cases, which are these—living beyond one's means and want of attention to business. As proof of this, I cite the absolute certainty with which Italians and other foreigners accumulate wealth, who come here with nothing but with a firm purpose to make money. They accomplish what they undertake, because they strictly observe these two rules.

They are vigorous answers to the question, "What is success?" Not attempting to enter the misty field of the mercantile world, I leave its consideration for some one better qualified to judge as to the claim it should have on our young men. I once heard it remarked by a clergyman who conducted the burial service of a farmer whose life had always been quiet and unassuming, yet who had not only accumulated a goodly share of this world's goods, but had so lived among his fellow men as to gain the respect of all, and died with the firm assurance of a home in the land beyond the grave—that "the verdict of those who look upon us in death, as to what our lives have been, will be true and final." Success or failure will be written over against our names, and the world will remember us for what we were, and not for any profession we may have made. What, then, is successful farming? Perhaps I cannot better answer this than to give results as I have had opportunity of observing.

The farmer spoken of had two daughters, one of whom married a thrifty young man who came to that home, and he and his wife assumed their share of the burdens and cared for the old people in their declining years. There was one absolute rule from which there was no deviation on this farm, which was—"A thing that is worth doing is worth doing well." With no unnecessary outlay for fine things in the house or on the farm, too good to be used, needed conveniences and even luxuries have been provided, money has been saved, and the value of the farm constantly increased because of increased productivity. While no attempt has been made to overreach some one else, there has been steady advancement, and what has been obtained has been saved. The family has always lived in quiet, and what was said of the father may as truthfully be said of each member of the family. This I call successful farming.

Another picture from real life. A young man began life on a good though not large farm, but thinking he saw greater opportunities on a larger farm, he sold and bought one containing several hundred acres. Whether the extra duties of the larger farm called him away or not, I will not attempt to say, but much of his time was spent in town. For a while his boys took charge of the farm in his absence; this at length became tiresome, and they, too, found congenial society in town. Crops were neglected, and hay and grain indifferently secured; cattle were neglected or poorly fed, and farm buildings allowed to go to ruin, until finally the farm passed into other hands. I heard a successful dairyman in the town of Bovina say recently that he believed it would be difficult to name another town where the farmers were so generally found at home every day. The remark made its impression upon me, and it may safely be concluded that if farmers are at home planning and executing their work instead of lounging round town talking politics, as a rule you will find them successful in their calling.

A farmer who had always lived in a grain-growing section of this State, being on a visit to some friends in Delaware county, objected to dairying, as there was no cessation to the work. Said he: "You fellows are obliged to stay at home and care for your stock winter and summer, while we have no stock except our teams, and when our grain is threshed in the fall, we have nothing to do but run around and visit all winter." Observing the snug pile of wood the dairyman had placed under cover, sufficient to last him a year, he remarked: "If I had such a pile of wood as that, I tell you I would not be out in the cold much this winter." I could not help wondering where the pile of wood would come from for the next winter's use. Not only does the dairyman have the care of his cows during winter, but then is the time to secure his year's supply of fuel, and what seemed to the grain-grower a serious task is really a blessing, for steady employment for any class of people is more conducive to health and happiness than months with nothing to do.

I do not mention this man as a good representative of his class; on the contrary, he was not a successful grain-growing farmer, but he did represent a large class of farmers who think they cannot pass a week without spending at least one day in town, and with this habit formed it becomes an easy matter to find some excuse for going more frequently. I would not advise keeping the boys always at home, but if father goes to town once or twice each week the boys are likely to think the same will be good for them, and thus early in life habits are formed which cling to them.

I would not be understood that only the farmer who accumulates a fortune is successful. Indeed, it is

possible for the lives of such to be miserable failures. But I would say that the man who makes the business of farming his chosen calling, with a determination to be abreast of the times, to learn all he can in regard to best methods of sustaining plant and animal life; who recognizes the fact that he is one of God's noblemen in that he is intrusted with the care of a part of His creation; who aims so to occupy his time that at each returning year, if called on to surrender his talent, he may do so with loyal increase—of him it will be said, he was successful in his work.—*Correspondent, Cultivator and Country Gentleman.*

FARM NOTES FROM VARIOUS SOURCES.

No class of people have better facilities for the enjoyment of life or the expectation of living longer than the farming community, because their occupation gives full employment to powers of both mind and body.—*Farmers' Home.*

Work on public high ways is now in progress probably more than it has been at any other time this season. Adopt a systematic method and do good work. Now is the time to put into practice the good plans talked over during the winter season.—*The Orange Judd Farmer.*

Exclusive grain farming, selling off the products of the land will, after a time impoverish the richest soil. Feed the crops on the farm and sell only concentrated products which contain little fertilizing matter, such as dairy products and meats.—*The Orange Judd Farmer.*

It is sometimes more important to cultivate fields that are idle than to permit growth to be made, as cultivation destroys weeds. The stray weeds in the fence corners are the ones that send out their seeds to stock the farm with objectionable growth next season.—*Mirror and Farmer.*

A gentleman speaking at a Wisconsin institute claimed that he has as good success fattening hogs with oats and peas as with corn. Also that it does not pay to feed a hog over 150 pounds weight; that if we would sell when hogs weigh 130 to 200 pounds we would get better prices.—*Mirror and Farmer.*

We need better agricultural education for our young men who are to be the farmers of the future, and one place to procure this is in the agricultural colleges; but for those who are debarred this privilege we would counsel a systematic course of agricultural reading and study at home during the long winter evenings.—*Nebraska Farmer.*

Never allow stock of any kind to run down in condition at any time, in order to economize feed. A system of farming well adapted to one man will not be suited to another under different circumstances. Economy is certain wealth in feeding farm stock, yet this does not by any means imply the stinting or cutting off of the rations to such an extent as to effect the growth and thrift of animals.—*Farmers' Home.*

A farmer near Hillsboro, Ill., who had a large crop of wheat on hand that he did not want to sell at present low prices (60 cts. per bushel) hunted up 36 head of good fair shoats and fed them on wheat. He ground the wheat into meal and soaked it in water before feeding. A few days ago he sold the pigs at the market price, and figured out the difference, finding that in this way his wheat brought him \$1.40 per bushel. Many others could profit by his example.—*Western Farmer and Stockman.*

Some farmers think they are saving money by using old worn-out tools.—The condition of the fence rows will tell something of the farmer in charge.—Every dollar spent for trees is a good investment if they are properly cared for.—The daily use of fruit helps materially to make people independent of the doctor!—The only possible chance for profit is in crowding to ripeness at the earliest possible age.—It is a good plan to look about in the fall, and see what can be done that will lessen the work next spring.—Don't fool away the time and feed in trying to make money out of old, thin, or scrub stock. Let somebody else do that who has no more sense.—Feeding is likely to remain an art, and the results will vary according to the skill employed, the quality of stock and condition of weather.—Farmers who succeed in growing and harvesting good crops often sell at a sacrifice, because they do not observe prices and study the markets.—Fruit should be looked upon more as a necessity than as a luxury. To such an extent should this view prevail that every farmer would raise fruit sufficient for home use.—*Mirror and Farmer.*

Of all the mean tricks a mean man can play the meanest, says the *Northwestern Agriculturist*, is the one of giving to a child as his own a calf or colt and stealing the proceeds of the sale of the cow or horse after he has raised it. It is dishonest. It is a crying wrong. Be fair about it, and let your child taste the sweets and run the risks of profit and loss of practical farm business, if you do not want to disgust him with the farm. Give him the colt and the feed, and let him use the proceeds of the sale on his own clothes, but don't steal his money for other purposes. A still better plan would be to sell your boy a colt at a fair price, take his note for the amount, charge him for stable, pasture, and feed, pay him when you use his horse, and let him finally sell the horse and out of the proceeds settle with you his debt for the purchase of the colt, feed, and etc., and see how much profit there is left. This can be done on the same plan with a patch of ground, rented to the boy for cultivation. It will teach him to keep accounts, teach him the attractive side of farming, and take away the idea that farming is merely drudgery. There is nothing original in the above suggestions, but they are valuable nevertheless.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

C. H. Stokely, Second-year, is mail carrier for the College.

Rain prevented work on Science Hall Thursday afternoon and Friday this week.

The Board of Regents will hold their next meeting on Tuesday, October 10th, at 3:30 P. M.

The Sewing Rooms were never so full in the Fall Term as now. The number reporting daily is almost 130.

Prof. Popenoe has just been notified of his election to the Society for the Promotion of Agricultural Science.

Prof. Mason makes a trip this week to the north-eastern part of the State for investigation of forest growth.

The Third-year Class will be entertained on Friday evening October 13th, at the home of Laura McKeen, a member.

Almost two inches of rain make fresh the lawns and gardens, and hasten the growth of the second-crop potatoes.

Foreman Sears spent Saturday on the farm home near Tesco, Saline County, and made thirty snap shots of places of interest thereabout.

The literary societies are fairly at work, and the INDUSTRIALIST expects to publish many a good thing that has its origin there during the year.

Mrs. Kedzie spent Thursday afternoon and Friday of this week in Topeka, in attendance upon the wedding of Miss Gertrude Baker.

The chilly weather of this week has given occasion for thankfulness that the old heating arrangements are not already broken up in anticipation of the new.

Applications for work in farm and gardens are more numerous than can be employed. The dry fall has hurried the work so that little is left for student labor.

Ground was broken on Monday for the building and stack of the new steam plant. Mr. H. Hedderman, of Topeka, has the contract, and will push the building forward at once.

The Faculty has complied with the recommendation of the Inspector General, U. S. Army, through the Board of Regents, to provide daily military drill for the young men of this College.

The War Department has informed President Fairchild that Capt. Bolton will not be relieved until August, 1894, thus giving the College the benefit of a fourth year of the Captain's experience.

The gentlemanly agents for the new edition of Johnson's Cyclopaedia, Messrs. Brown and Brown, have been interviewing members of the Faculty this week in behalf of that most excellent book of ready reference.

Mr. Arnold Emch, of Soleure, Switzerland, a graduate of the Cantonal College at that place, where he recently completed a six year's course, has entered this College for a year's special work in pure and applied mathematics.

The Chemical Department is occupied with the annual test of sorghum for sugar content. The poorer varieties have been gradually weeded out until there are now but a dozen leading sorts and a few new ones under experiment.

The State Board of Public Works, with the State Architect, visited the College on Monday, inspecting the work on the new Library and Science Hall. Already the foundation shows above ground, and convinces of its substantial character.

Mrs. Bray, of Mendon, Ill., visited College this week in the company of Mr. and Mrs. Cottrell of Wabau-see, and Mrs. Mary Smith of Manhattan. Mrs. Bray's last visit to the College was twenty-two years ago, when all was on the hill a mile west of the present location.

The Twenty-sixth Annual Meeting of the Kansas Academy of Science will be held at Emporia on October 25th to 27th inclusive. A large number of the members of the College Faculty are members of this Society, and several are planning to be present at this meeting.

The classes in Athletics and Calisthenics have started this week with enthusiasm. Miss Bessie Little, Assistant in Sewing, has charge of the Calisthenics, with classes before Chapel and at the 5th hour. W. A. Cavanaugh, Third-year, is leader of the athletic classes before Chapel daily and Friday afternoon.

Dr. Mayo's post mortem examination of the cattle which recently died in considerable numbers near

WaKeeney showed impact of the stomach, producing indigestion and death, and caused, presumably, by the large quantities of dry feed consumed during the drouth that prevailed there during the Summer months. The disease is much like the well-known "corn-stalk" disease in the manner in which it is produced as well as in its effects.

Many improvements have been made in the Drawing Department lately: The blue-print room has been remodeled and plastered, the top-light of the drafting room doubled to add warmth, and a corner of it set apart by partition for a tool room. These changes give the Department ample room—two class rooms, a lecture room, office, model room, blue-print room, and two tool rooms.

The Friday lecture of this week was given by Prof. Willard, his subject being the so-called ferments. It is impossible in a brief notice to outline the clear statements in which fermentation was described as from either purely chemical or organic sources, and shown to be in accord with well known if not understood principles of affinity or growth. All enjoyed the clear and distinct discriminations, even when some of the terms were beyond their advancement in the course.

The reception room of the College is enriched by an excellent life-sized crayon portrait of Dr. Joseph Denison, the first President of the College. It is the gift of Messrs. I. T. Goodnow and E. B. Purcell, to whom the thanks of all are due for thus preserving to future students the remembrance of one whom their predecessors delight to honor. The picture forms, with that of the second President, Hon. Jno. A. Anderson, a very proper ornament in the room of general reception for visitors.

The INDUSTRIALIST did not apologize last week for its non-appearance for several weeks for the reason that it "didn't have to." In explanation, however, its readers are informed that moving a printing office, putting in new material and dynamo, with delays incident to the putting in place of shafting and belting, consume a great deal of time; and the opening of the term added much to the duties of the printers. INDUSTRIALIST No. 4 goes to its readers this week, and it is hoped that the vexatious delays are at an end.

A friend writes to President Fairchild enquiring as to the whereabouts of Carl D. Adams, stating in explanation that he had read in the dispatches that one Carl Adams from Central Kansas had been killed in the "run" into the Strip. The INDUSTRIALIST hastens to relieve the anxiety of this enquiring friend by assuring him that it wasn't our Carl that was killed for several reasons: First, he wasn't there, being too wise to participate in a "run" with one chance in a hundred of securing a claim on which to raise sand-hill plums; second, he is too lucky to be killed by accident, and not so fond of a "scrap" as to measure strength with a sanguinary foe; third, trigonometry, surveying, agricultural chemistry, and general history fill his mind so full that he has no thoughts of schemes and schemers; and fourth, so long as he can live in Kansas he doesn't care a rap for any other country, anyhow!

Society officers are elected for the Fall Term as follows: Alpha Beta—President, G. L. Christensen, Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. W. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, C. C. Smith. Webster—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Treasurer, J. B. Dorman; Critic, J. M. Williams; Marshal, E. C. Trembley; Board of Directors, Geo. Forsyth, W. Pape, Chase Cole, E. R. Farwell, G. M. Dick. Hamilton—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Treasurer, C. E. Pincomb; Critic, E. L. Frowe; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, R. J. Barnett. Ionian—President, Mary E. Lyman; Vice-President, Miriam E. Swingle; Recording Secretary, Hortensia E. Harmon; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley.

The first of the lectures on economic questions to be given from week to week during the Fall Term, was delivered last evening, by Dr. J. E. Earp, of El Dorado. In spite of the mud made by nearly two inches of rain during the previous night and day, and threatening showers at the time, an audience of 170, mostly students, gathered to hear the pros and cons of governmental control of means of communication and transportation. Dr. Earp proposed to confine his topic essentially to a postal telegraph system and the railroad problem. Presenting statistics to show the enormous growth of railroad capital in the country, both by actual investment and by watering stock, and noting the tendencies toward consolidation of this capital for control of coal supplies and for general manipulation of public interests, he concluded that this nation is likely to find the need of putting this practical monopoly under direct control of authority as some other nations have already done. Of telegraph control, he said that ours is the only prominent country which has not already found economy in connecting this means of ready communication with the postal service. While not overlooking the difficulties to be met in adjusting all interests to such a system, he believes that the country will gradually find the way to settle the question in the interest of the people for constant economy and fair distribution of wealth.

GRADUATES AND FORMER STUDENTS.

J. N. Harner, '92, visits the College today. He is teaching near Green.

Bert Harrop, student in 1889-90, plans to attend the Kansas City School of Pharmacy this year.

Misses Lora L. Waters, '88, Mary E. Cottrell, '91, and Ruth T. Stokes, '92, teach classes in preparatory studies this year.

C. L. Myers, student last year, visited the College a few days last week on his way to Sedalia, Mo., where he will attend Robinson's Business College this year.

D. G. Fairchild, '88, now Assistant in the Division of Vegetable Pathology, U. S. Department of Agriculture, expects to sail early in November for Europe, to continue his botanical studies. He may be absent several years.

J. H. Monroe, student in 1882, visited the College this week. Mr. Monroe, with his brother, also a former student, has a successful business in Denver, Colo., where they carry on a general book-seller's and publishing house.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith. **Ionian Society.**—President, Mary E. Lyman; Vice-President, Miriam E. Swingle; Recording Secretary, Hortensia E. Harmon; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsyth, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

September 22nd.

At the appointed time, Vice-President Hayes called to order a goodly number of Ionians and friends. Society opened with congregational singing, Miss Helder at the piano. Miss Lyman led in devotion. Roll-call showed a good proportion of members present. The officers of the Fall Term were then installed and took their respective places. The program was opened with a reading by Miss Swingle entitled, "Here she goes and there she goes." The Oracle was presented by Miss Hayes, whose motto many might well follow, "Look, then, into thine heart, and write." Miss Correl then favored the Society with a vocal solo, Miss Helder, accompanist. Short speeches by Misses Neilson and Patten followed. Miss Wilson, under the topic "My Vacation," told an interesting incident of the World's Fair. Miss Patten reviewed a book read during the Summer, and gave an entertaining account of a story of Kentucky life. Miss Neilson closed the program with an instrumental selection. The usual routine of business was taken up. Report of critic. Reading of minutes. Adjournment. I. R. F.

September 22nd.

The Alpha Betas were called to order soon after chapel by Vice Pres. Christensen. The program opened with a quartet, "My Life that is to be," by Miss Fryhofer, Miss Smith, Mr. Fryhofer, and Mr. Harling, with Miss Secrest organist. Devotion, Miss Cottrell. Installation of officers for the fall term. The select reading by Mr. Coffey was followed by a declamation by Miss Sadie Moore. The question, "Should the Strip have been opened in a different way?" was argued on the affirmative by W. H. Phipps, seconded by Miss Elva Palmer. A. E. Ridenour and Miss Stella Kimball argued the negative. The affirmative contended that the way in which the strip was opened was disgraceful and beneath the dignity of a civilized nation; that the Government should have opened the land for settlement much earlier than it did, enabling the home-seekers to put in fall crops, and make the necessary preparation for winter. The negative claimed that the action of the Government should be sustained; that whatever the plan may have been, the "great rush" could not have been averted and the result would have been virtually the same. The Judges, Mr. Clothier, Mr. F. Yeoman, and Mr. C. C. Smith, rendered a decision in favor of the affirmative. The Gleaner, edited by G. W. Fryhofer, was then presented to the Society. After recess, a duet, "Do they miss me at home?" by Misses Cottrell; after which extemporaneous speaking was indulged in. The program closed with an instrumental solo by Mr. and Miss Fryhofer.

A. E. R.

September 23rd.

The Webster Society was called to order at 8 P. M. by J. Stingley, President protem. Roll call showed an unusually large attendance. The Society was led in prayer by H. W. Steuart. The minutes of the previous meeting were read and adopted. After the inauguration of officers, President Ames was called on

for an inaugural speech and responded with a very appropriate one, showing him to be the man he is. We then had the pleasure of welcoming Messrs. A. G. Bittman, J. W. Furley, and T. Robertson, three good men, to membership of the Webster Society, after which the program of the evening was opened by a very lively and interesting debate by J. M. Williams and Mr. Dean on the affirmative and J. Evans and Mr. Pape on the negative. The question was a popular one, and read as follows: "Resolved, that the adoption of the eight-hour system would be beneficial to the laboring class." Both sides brought forth excellent points. The Society decided in favor of the affirmative. Mr. Uhl gave a declamation entitled, "Responsibility of the American Citizen." His good taste in selecting a piece and the way he delivered it would have been a credit to any society. After recess Mr. E. H. Freeman gave a humorous declamation entitled, "Fashionable Piano Music," which was well received by the Society. Mr. Farwell read an interesting essay on a World's Fair building. The Webster quartette entertained the Society and were heartily encored. Mr. Symms gave all the latest news of interest. Under the head of extemporaneous speaking, Mr. E. A. Donaven gave an amusing talk on the "Opening of the Cherokee Strip," having just returned from there. Unfinished and new business was taken up, in which it was moved and seconded that the Society meet at 7:30 P. M. hereafter. Critic's report 10:20. Society adjourned 10:30. W. A. C.

September 23rd.

A vigorous rap and the musical voice of Vice-President Jones called a crowded house of Hamiltons to order promptly at 8 o'clock. Prayer offered by R. K. Farrar. After the installation of officers, the Society was entertained by the usual inaugural and valedictory addresses. Kellogg administered the oath of membership to O. E. Noble and E. O. Farrar. F. E. Smith opened the program with his essay in a very creditable manner. Debate, question,—"Resolved, That ambition has caused more corruption in politics than money." C. A. Johnson, in opening the question, showed that politics is becoming more corrupt all the time; American people, in their eager desire to get ahead, lose sight of morality. Politicians resort to the use of whiskey—the cause of much corruption. W. H. Painter opened the negative by endeavoring to draw the line between the corruption caused by the agencies under discussion. By means of illustrative stories, he showed how political men gain the victory with money. Mr. Carnahan next made an eloquent speech in favor of the affirmative. He showed us how ambition causes corruption, while money helps carry out the corrupt ideas. That corruption comes from the ambition of the officials to be elected. C. E. Pincomb continued the negative and ably rebutted the argument brought forth by the former speakers; he also showed how contractors control a large vote by employing just such men as will vote their ticket. Judges Pope, Holsinger, and Norris decided two to one in favor of the negative. R. S. Kellogg read a poem which showed careful preparation and good judgment. I. Jones gave an oration in the form of a discussion on "My Experience of College Life as Compared With that of My Western Career." V. I. Sandt gave an interesting and instructive discussion on the snake. After recess, the Society indulged in an old time extemporaneous discussion. Adjournment. F. Y.

Farm Profits.

The profits of a farm are what?

Some consider the profits to be what is left after the family living is had and the current expenses of the farm are paid. Others are willing to credit the farm with the living and call that a part of the profit. Which is right?

It depends upon whether the farm is charged with the farmer's labor.

A man is certainly entitled to a living if he works for it, but if the farm is not charged with the value of the work of the farmer, it is reasonable that it should not be credited with the living.

Strictly speaking, the farm should be charged with every day's work done upon it; and it should in turn be credited with everything grown or produced upon it, whether used upon the farm or not, even to the rent of the farm home. But with the majority of farmers this would necessitate an account of details that would be rather tedious to keep. If the farm living is to balance the farmer's work, this lessens the small accounts and makes the profit only the surplus.

Upon this basis, considering the amount of capital invested, the farm would be paying a very good percent of interest if there was no surplus. The living for the farmer and his family would show a profit equal at least to what is made in many other lines of business. Whether or not in doing this the capital is infringed upon depends upon the management given. With good care good crops may be grown on the farm every year, and the fertility of the soil, as well as the farm, be generally improved. Another, with fully as good opportunity, will gradually sell his farm. In the latter case he is losing money, while in the former a profit is being realized, although there may be no visible surplus after the living is taken out. There is one advantage at least on the farm: although the profits may be small, the farmer is reasonably sure of a good average living.—*Correspondent, Our Grange Homes.*

Adversity exasperates fools, dejects cowards, draws out the faculties of the wise and industrious, puts the modest to the necessity of trying their skill, awes the opulent, and makes the idle industrious.—*Anon.*

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Hiawatha is building a new high school building.

The State Normal School has a Mandolin Club.

St. Benedict's College, at Atchison, had 160 students in attendance last year.

The Kansas Academy of Science will hold its annual session at Emporia, October 25th and 26th.

Dr. Helmholtz, the great German scientist, passed through Kansas on a Union Pacific train one day last week.

The Washburn Reporter has changed its name to Washburn Mid-Continent, and has reduced the subscription price to fifty cents a year.

At a school meeting in Smith county there was only one man present, but the thirty women there made him president and went ahead and ran the meeting to suit themselves.

State Supt. Gaines will have the new issue of the School Law ready for distribution within a short time. It will be a vast improvement over the old one in many respects.

Several of the college papers have begun a vigorous campaign against the hackneyed college oration, and suggest that a live inter-collegiate debate take its place. Let the good work go on.—*Mid-Continent.*

Prof. Geo. Sutherland, long and intimately connected with Ottawa University as President and instructor, has resigned to accept the Presidency of the Baptist College at Grand Island, Nebraska. Prof. Sutherland came to Ottawa in 1854.

The Senator Plumb library, which was donated to the Normal School, is still at the Masonic Temple. As soon as the new wing is completed a special room will be made for it and it will be moved to the Normal building. It is a very valuable library.—*Emporia Gazette.*

A queer state of affairs is developed in a district in Wabaunsee county. The treasurer who was elected at the last annual meeting to fill a vacancy refused to qualify or accept the office for the reason that he desired to teach school. In the meantime there is only one other man or woman in the district who will accept the office, and the other two officers will resign if he is appointed. Nobody out there seems to know what they will do about it.—*Hiawatha School News.*

Electricity for Farmers.

The electrical papers predict great possibilities for country towns and farms through the increasing use of electrical street roads. The *Electric World* says there is nothing in the cost that prevents the possibility of making electric street railroads as common as country roads, but that changes must come in the form of vehicles used. It says that every man could have his own electric vehicle or vehicles, so that he could go to town whenever he pleased, carrying a load of produce for sale, and paying the company a toll for the privilege of having his wagon drawn over their tracks. Longer hauls of produce and the transportation of larger loads would be of great benefit to the farmers, would add considerably to the net returns of their value. The same current could light the farmhouse at night with the electric light, and could be used for power on the farm, for the silo, the churn, the washing machine, the saw, and hundreds of other objects where power is needed.

Wonders in Photography.

How to photograph colors is one of the problems which deeply interests scientists of today. A French artist, M. Lumiere, has finally succeeded in securing fairly good results in this line of photography, and his pictures are now on exhibition at the World's Fair. Among them may be seen a banquet showing all the delicate hues of various flowers, also a cottage in full sunshine surrounded by shrubberies, and another representing a corner of a park with the blue sky overhead. Two difficulties arise in the process. One that a long time is required to take the impression in colors, and the other is that no proof on paper can be obtained. But doubtless some "wizard" like Edison will soon discover a way to remove these drawbacks. Another French invention is the photographing of animals in motion, so that the galloping of horses, the leaping of athletes, the flying of birds, the swimming of fishes, and many other forms of vital action are now taken in the fraction of a second.—*The Congregationalist.*

Don't sit in a corner and mope because things are not going just as you would like. A disagreeable face will not alter a disagreeable fact. Try to extract some grain of comfort out of your adversities. Never despair. Under whatever circumstances, be cheerful and hope on. There is nothing so philosophical as a smile. A merry heart is the height of wisdom. The greater part of our griefs will disappear when viewed through the lenses of cheerfulness. Let the dark past sink out of sight. Look toward the sunrise. Shout with merriment, as if you saw the dawn kissing the hills. Fill your soul with the visions of morning and the song of the lark. Then all will become suffused with daylight—all the gloomy places will pulse with sunshine, the clammy rocks will glisten with dew. Would you like to know the key to unlock the doorway to a happy life? It is cheerfulness.—*Exchange.*

The Belgian Farmer.

The Belgian educational system includes four schools for higher education, twenty-four secondary schools for boys, nine for girls, forty short courses of agriculture in secondary schools, numerous courses in agriculture in normal and primary schools, and lectures to farmers and soldiers. This seems to be the most complete system of agricultural education that has been devised, and comes from the most densely populated region in Europe, and from one in which agriculture has already made the greatest advances. It illustrates this principle, that the more farmers know the more they want to know. The better the farmer the more anxious he is to acquire still higher efficiency, both in the line of science and practice in the line of his profession. We have traveled through Belgium, visited their leading agricultural school, that at Gembloux, and could not help but imagine what a paradise the Western States would be when farmers obtained the same proficiency in the science and art of agriculture that has been obtained by the Belgian farmers.—*Live Stock Indicator.*

MANHATTAN ADVERTISEMENTS.

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FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

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PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

PROFIT AND LOSS IN STEER FEEDING.

BY PROF. C. C. GEORGESON.

THERE are some sharp contrasts in the results of the steer feeding reported in Bulletin No. 39. Only three lots out of the five show a profit on the right side of the ledger, while two are on the wrong side. The difference is due to the feed. The general outlines of the experiment have been noted in the INDUSTRIALIST long ago, giving feeds, weights, and gains; but the financial standing of each lot has not been noted here, and perhaps our practical feeders are more interested in this view of the case than any other; for, after all, the profit is the test by which to measure the merit of any method of treatment. The profit and loss account stands as follows:—

LOT I. (THREE STEERS).

FEED, BALANCED RATION.

(Mixture of 10 pounds corn meal, 5 pounds shorts, 2 pounds bran, 2 pounds oil meal, increased to 4 pounds oil meal during last 60 days).

Dr.
To cost of three steers @ \$37.36..... \$112.08
To feed from arrival to beginning of experiment..... 4.77
To feed during experiment..... 65.47
To freight, yardage, and hay when sold..... 4.91—\$187.23

Cr.

By three steers 4120 pounds @ \$5.30 per cwt..... \$218.36
Profit on lot..... \$31.13
Cost of feed per head..... 23.41
Profit per head..... 10.37
Total cost per head..... 62.41
Total returns per head..... 72.78

LOT II. (THREE STEERS).

FEED, CORN MEAL AND MOLASSES.

Dr.

To three steers @ \$37.36..... \$112.08
To feed from arrival to beginning of experiment..... 5.62
To feed during experiment..... 74.06
To freight, yardage, and hay when sold..... 4.91—\$196.67

Cr.

By three steers 3870 pounds @ \$4.75 per cwt..... \$183.82
Loss on lot..... \$12.85
Cost of feed per head..... 26.56
Loss per head..... 4.28
Total cost per head..... 65.55
Total returns per head..... 61.27

LOT III. (THREE STEERS).

FEED, OIL CAKE.

Dr.

To three steers @ \$37.36..... \$112.08
To feed from arrival to beginning of experiment..... 4.24
To feed during experiment..... 78.33
To freight, yardage, and hay when sold..... 4.91—\$199.56

Cr.

By three steers 3850 pounds @ \$4.90..... \$188.65
Loss on lot..... \$10.91
Total cost per head..... 66.32
Cost of feed per head..... 27.52
Loss per head..... 3.44
Total returns per head..... 62.88

LOT IV. (FIVE STEERS).

FEED, EAR CORN IN BARN.

Dr.

To five steers @ \$37.36..... \$186.80
To feed from arrival to beginning of experiment..... 8.03
To feed during experiment..... 71.50
To freight, yardage, and hay at sale..... 8.19—\$274.52

Cr.

By five steers, 6600 pounds @ \$5.10 per cwt..... \$336.60
Profit on lot..... \$62.08
Total cost per head..... 54.91
Total returns per head..... 67.32
Profit per head..... 12.41
Cost of feed per head..... 15.91

LOT V. (FIVE STEERS).

FEED, EAR CORN IN YARD.

Dr.

To five steers @ \$37.36..... \$186.80
To feed from arrival to beginning of experiment..... 8.21
To feed during experiment..... 85.23
To freight, yardage, and hay when sold..... 8.19—\$286.43

Cr.

By five steers, 6810 pounds @ \$5.15 per cwt..... \$350.71
Profit on lot..... \$64.28
Cost of feed per head..... 18.88
Total cost per head..... 57.29
Total returns per head..... 70.14
Profit per head..... 12.85

Lot V., which was fed out doors, shows a profit of some 44 cents per head more than lot IV., fed in the same manner, but tied up in the stalls. This is owing to the fact that they brought 5 cents more per hundred. At the same price lot IV., fed in the barn, would have made the best profit. Lot V. brought this extra 5 cents because they were heavier to the extent of 210 lbs. on the day of sale. The steers were divided into lots soon after their arrival in the fall, and lot V. put in the open yard, while lot IV. was tied up in the barn, and never having been tied before this lot fretted unduly under the restraint thus forced upon them. Consequently they did not feed well until they became used to the conditions, and owing to these circumstances the outdoor lot gained 423 lbs. more

than the indoor lot in the three weeks of preliminary feeding before the experiment began. When the experiment began the gains of the two lots were almost exactly alike, but the indoor lot ate less for the gain made than the outdoor lot. Thus it happened that at the close of the experiment lot V. was heavier than lot IV. by the amount they had gained during the preliminary feeding. However, during shipment, they shrank more than lot IV., so that on the day of sale they were only 210 lbs. ahead.

It apparently argues against housing fattening cattle. But this is not a safe conclusion. The records show that during the 129 days the experiment lasted the indoor and outdoor lots made practically the same gains, while the outdoor lot ate in that time 2,172 lbs. ear corn and 1,150 lbs. fodder more than the indoor lot. This amount of feed was worth a total of \$11.63. Now, if the indoor steers had been accustomed to confinement, lot V. would not have gotten the start of them during the preliminary feeding, and they would not have been heavier on the day of sale, in which case both would have brought \$5.10 per cwt. The indoor lot would then have made the best showing to the amount of \$11.63, the value of the feed which lot V. ate more than lot IV. The experiment does show, however, that steers which have not been accustomed to confinement will make but poor gains until the effect of the restraint wears off.

I conclude that it will pay well to shelter steers which are used to being housed. But instead of tying each steer in a stall, I would turn several together in a loose box. Then I would let them out for exercise a few hours in the middle of each day, and while they were out turn hogs into the pens to work over the droppings and waste. Under such conditions, with docile steers and the labor of handling them reduced to a minimum, I am convinced that fattening cattle can be housed with profit.

INDUSTRIAL DRAWING IN THE STATE TEACHERS' EXAMINATION.

BY PROF. J. D. WALTERS.

THE papers in industrial drawing of the September examination of the candidates for State certificates, a very uneven lot of thirty-seven honest confessions, may well serve as a test for serious contemplation. The questions, or problems, had evidently been prepared to elicit statements that would show the attitude of the teachers toward this branch of instruction and exhibit their ability to present the subject systematically, as well as give them a chance to prove their skill in handling the pencil. They were as follows:—

1. Describe your personal experience in learning and teaching drawing.
2. What importance has industrial drawing in common school education?
3. Give in outline a series of lessons for beginners.
4. Draw, freehand, a cube with a circle, an ellipse, and a rhomboid inscribed in the three sides shown.
5. Sketch any object given by the examiner.

The papers as a whole were not satisfactory. They showed that the majority of the candidates had but little conception of the subject and its educational and practical importance. They were plain confessions of a dense ignorance with regard to the real character and purpose of this highly important study.

Of the thirty-seven candidates, only fifteen claimed to have received systematic instruction in drawing, nine stated that they had received occasional instruction in the common schools, and six stated that they had studied the subject from text-books without a teacher. This would leave seven who had never studied the subject. Yet, even of those who claimed to have had instruction, two stated that they disliked the subject "exceedingly"; one confessed, "My personal experience in learning to draw has proved to me that I have no natural ability in this line of work," and one modestly remarked, "I am one who is very little adapted to it naturally."

Less than half the number claimed that they had taught drawing; and of these, only ten showed some proficiency. A few more showed that they evidently had done some primary work, but the rest exhibited an utter lack of skill in handling the pencil and a complete ignorance of the principles of delineation. Only three claimed or intimated that they had studied linear perspective, and one of these made two object drawings of a hat and shaded them with a pencil as if they were flat surfaces, adding sarcastically: "These figures are positively free-hand work, and no aids have been used in any part of the work." One especially gifted artist wrote under his figure: "When

Mark Twain drew a cat he always wrote under it its name so that no one would mistake it for a horse. For similar reasons, the names have been written in the given figures."

The second question was well answered by most candidates, and the general tone of the written matter of all papers was fair. The course of lessons for beginners, however, showed that a majority of the candidates had read but few books, not even textbooks, on the subject.

These being the facts, the question presents itself: What can be done to secure a better preparation of those who are to teach this important branch in the schools of the State? The answer is hard to find, but the first and main argument is evidently the creation of a proper sentiment in favor of the study of form and the education of the eye. An effort should also be made by the conductors of the summer normal institutes to give the course in drawing a proper share of attention. Last summer less than a dozen institutes taught drawing, and in nearly every institute the classes were small.

In the cities, where reforms can be affected more easily than in the country, special teachers should be employed for a year or two to assist the instructors in introducing better methods.

The main work, however, should be done by the normal schools, county high schools, and colleges. Every institution that intends to prepare teachers for the common schools of the State should lay out a systematic and complete course in drawing, covering the subject, of free-hand drawing, designing, object drawing, orthographic and isometric projection, linear perspective, etc. Only first-class teachers should be entrusted with this work, and the college boards should remember that instruction in oil and water-color painting, wax-work, fancy needle-work, pen-flourishing, etc., is no substitute for drawing. The so-called art departments should be places for honest and systematic work instead of schools for worthless amateur daubing. Then let the State Board of Education reject candidates from institutions that are unable or unwilling to do their duty.

The close of the nineteenth century calls for more and better work.

A PRIZE BULL.

BY PROF. C. C. GEORGESON.

It has always been the policy of the College, in the selection and breeding of live stock, to strive to rear animals which shall not only be typical representatives of the breeds to which they belong, but, in order to the better serve the purpose of object lessons for students and visitors, be among the very best of their breed to be found anywhere. That we have been reasonably successful in carrying out this policy is, I believe, freely conceded by breeders and judges of good stock, who have had opportunity to inspect the College Herd. The Shorthorn bull Craven Knight, which was obtained from Col. Harris, Linwood, Kansas, the Holstein-Friesian cow, Empress Josephine IV., which took sweepstakes as the best dairy cow on the only occasion she was ever exhibited, and the Hereford cow, Miss Beau Real VII., now unfortunately dead, which was sister to the champion Hereford now exhibited at the Columbian Exposition, are animals of acknowledged merit. And boms, indicative of victories gained by the Holstein just now we have received news and first premium rib-Friesian bull, Sylvia's Chief, which has made the round of several State fairs with the herd of Mr. M. E. Moore, of Cameron, Mo.

The College bought this bull from Mr. Moore in 1890, together with two cows. He was then a promising youngster only a year old; he has since developed into a grand animal, superior in all the points which are prized in a bull by lovers of Holstein-Friesian cattle. It was purely accidental that the bull was exhibited. Just before the opening of the fair season, Mr. Moore's aged bull met with an accident which disqualified him for exhibition. In this dilemma Mr. Moore applied to the College authorities for the temporary transfer of Sylvia's Chief to him that he might fill the place of his own show bull. Since Mr. Moore was the breeder of the bull, the request was granted, and he was shipped to Missouri only a short time before he was to appear at the fairs, leaving practically no time for preparation for the show yard. Nothing further was heard of him until a day or two ago, when Mr. Moore sent us three first-premium ribbons taken by this bull at the Nebraska State Fair, the Iowa State Fair, and the Inter-State Fair in Kansas City respectively. This was a pleasant surprise, for, although we knew we had a good bull, it was not expected he would make this showing in competition with the best herds of the west. He has just returned to the barn, and right from the cars weighs 2065 lbs. decidedly lean in flesh. Sylvia's Chief 15189 was calved April 19th, 1889, sired by Chief of Maple Hill 1674, out of Sylvia 1541. His sire has long been favor-

ably known in the show yard, his dam is an exceptionally fine cow, and grand-dam on dam's side is reported to have given 102 lbs. of milk in one day in her home in Holland.

City or Country—Which?

September marks a period when many young men leave the farm for college, looking to that as the door that leads them forever from the old homestead out into the great world where their chances for success in life are to be vastly improved. It is to this class, many of whom are just now hesitating which direction to take and which course to pursue, that the *Gazette* wishes to take into its councils for a short time, asking only a brief hearing of its presentation of the situation.

For many years past our great cities and the industries which cluster around them have been making enormous growth and rapid development, and the opportunities and calls for bright young men have indeed been great. There is no need of denying that from the money standpoint many of our best young men have succeeded better by leaving the farm than they would have done by remaining upon it. Nor will the flow of young men to the cities ever cease from the very nature of the case. Our cities absorb and use up human life just as they do animal life and material products. Horses raised on the farm drift to the city to be worn out there; so many bright minds pass in the same way from the quietude of the farm to the hurry and worry of the city. The farm is the best place for raising boys; the city wears them out the most rapidly. Its very methods of existence make it impossible to breed and rear the best beings for its own existence.

Heretofore our large cities have largely been able to absorb and utilize the graduates from our institutions of learning, from the post-graduate of the university, with his Ph. D. degree, taking up the professor or entering the laboratory of manufacturing establishment, down to operators and book-keepers from telegraph and business colleges. A small percentage of the above have secured lucrative positions; the majority have only entered a tread-mill existence where they are worn out without care or mercy from their employers. Still the crowd from the schools has been for the most part absorbed. Can it be in the future? The daily press tells us that in Germany a society has just been formed, the object of which is to secure positions in other countries for worthy graduates of German universities—that Germany is overstocked with University men who cannot find the means of making a living. The same is true of England and France.

With our stream of young men pouring from the college halls to the city, the struggle grows harder and harder, and only a few at best can hope to reach the top. Under the circumstances why should not our farmer's sons who are about to enter college give agriculture and its possibilities a fair consideration before deciding against it? To-day the country is not in need of more doctors, lawyers, or professional men generally; it is overcrowded with these. On the other hand, there is a real demand for trained men in agriculture. Country communities are overstocked with doctors, but there is a dearth of intelligent, cultured farmers—men who make a success of their own business and who give stamina and character to country life. Our country communities today stand greatly in need of well-trained, well-prepared young men who will bring to them what country life must have in America before it shall reach the measure set to it by the very nature of things. To the young men who will bring to the work this training and preparation and an earnest desire to be helpful to their fellow men there is every promise of success. Under their care the fields will grow richer and the homestead a principality. Each can rule his own domain without fear of strikes or suspicion that some competitor, a little sharper than he, is about to drive him off the field. Bank failures will enter little into his daily thought or care. In every meeting of the community his counsel will be sought, and he will be as a light to the neighborhood. To accumulate money in large amount, the city still offers the only opportunity; to lead a life of general helpfulness to his fellow men, the country offers by far the largest opportunity, and our college student can turn his face in that direction with every prospect of success before him.

In England when a man acquires a competence his first move is to secure land, and the man with the smallest holding is looked upon with envy by the less successful. In America many a young man has come to despise the old homestead, and to look upon broad acres of rich soil as something that may be parted with as readily and with as little thought as a trader changes horses. The present era of financial distress will mark the first genuine improvement in appreciation of the average American citizen for a holding on mother earth. No matter how much the drop in city lots, farms are not going to depreciate. No one that can hold on now is giving up his farm because of hard times, but holding to it closer and more firmly, realizing that it is the surest possession held by men.

To the young man about to enter college, who has a genuine love for live stock, and who feels happiest when in the fields with them and the growing crops, the *Gazette* most earnestly urges a continuance and cultivation of this quality. It is all right to go to college and get the best education possible, but turn that education in the direction of agriculture and the sciences that cluster around it. Study everything with the object in view of returning to the farm, taking the old homestead in care if possible, or acquiring another equally good, and devoting a life to usefulness in the rural community. There is not one chance of failure here where there are a hundred sure to come to the city.—*Breeder's Gazette*.

FARM NOTES FROM VARIOUS SOURCES.

Farms are not made rich by selling off grain and hay. Keep these at home, and return them to the soil, and you will have better crops each succeeding year without a big bill for fertilizers.

A good argument can be made in favor of either the general farmer's method or the specialist's. But the man whose opinion is best worth having is the man who has made a success of one or the other.

Keep an account with all the operations of the farm. The only way to know whether there is a profit is to keep a strict account. To attempt to guess is not only uncertain, but leads one to over estimate his profits.

Talk up a farmers' club now in your own neighborhood for the winter. It will give you recreation, and by coming together you will develop some new ideas that will be of value to all. Too many farmers live like hermits in the winter.

One of the important things for a farmer to do is to keep posted on the markets and be conversant with changes in prices. Unless he does this he cannot sell to advantage. And it is just as important to sell to advantage as to cultivate well or to buy cheaply.

Farm implements and machinery have done much toward raising our agriculture to its present high grade. But more than one farmer has been kept poor by buying machinery that he could not use with economy. Be sure that the extent of your crop justifies the purchase.

There are two roads to better crops: Thorough tillage, and the enrichment of the land by the application of fertilizers. If you can only afford one, the thorough tillage method should be tried first. At any rate it will be folly to put on the fertilizer and neglect the tillage.

The high-way tax should be raised in money, and placed in the hands of agents who understand their business. If this were done and the roads looked after during the entire season, timely repairs being made as they were found necessary, an improvement would soon be visible.

The Autumn affords opportunity for doing many needful things about the farm which are not done at all if put off until Spring comes with its rush of work. Maybe you have been thinking about doing some draining? Let us advise you to get at it now. There never will be a better time.

There is no more important work connected with the harvest season than that of selecting and putting away the seed corn. It is a poor way to delay doing this until you are ready to plant. And then the only right way to select it is in the field, where where you can see just what the parent plant is.

The profits from fruits, dairy goods, and other farm products for immediate consumption, lie largely in the method of marketing. The producer should sell them under his own brand, so as to establish a reputation, and it should be clearly understood that his name stands as a guarantee for quality.

If weeds are cut when they are at all approaching ripeness, the only safe way of disposing of them is to burn them up. If the seeds are already formed they will ripen sufficiently to germinate, and so re-seed themselves. This is a reason why some men never succeed in clearing the weeds from the farm.

The method of farming which gives the most satisfaction, and usually the most profit, is that which is suited to a small area which can be worked mainly by the owner. As soon as he comes to employ labor, his expenses mount up, and there are many things that he can never hire done so well as he would do them.

When a man has made a comfortable living from a little farm, and perhaps saved some money for a rainy day, it is a bad thing for him to get an idea that he needs more land to pay taxes on. This is the rock upon which many a hitherto successful farmer has been wrecked. Make almost any other mistake, in preference to this.—*Practical Farmer*.

We do not like to see a farmer sell any animal by guess. Speculation should be wholly eliminated from the business of agriculture. Know what you are doing, when you buy or sell, and know what a thing costs before you sell it. It is safe to say that in selling an animal by guess, either the buyer or seller expects to gain an advantage over the other.—*Rural Canadian*.

The farm without trees, both fruit and shade, is not at its best. The majority of farms have too few trees and will not have enough until the owner is brought to see the wisdom of having a little nursery of his own for growing them. This could well be made an adjunct to every farm and then good trees would be easily and cheaply obtained and so would be planted.—*Practical Farmer*.

Clean up about the yard, and also around the barn and barn lots. Repair all fences; make new lots for winter use if needed. Have everything neat when winter comes on, and do all heavy hauling about pastures and yards while the ground is solid. If this is deferred until next Spring when the ground is soft, much damage will necessarily be done. Now is an excellent time to cut down and grub out swamp ash, willow patches, briars, or other troublesome growths about the farm. The roots exposed to the hot sun in conjunction with the extreme drouth prevailing in many places, will be almost certainly killed. After the grubbing, take a "stump" plow and break the ground, exposing still more roots.—*Orange Judd Farmer*.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Secy. Graham attends the State Fair today.

Lucy H. Waters, Third-year, is in classes this Fall.

Prof. Failyer made a business trip to Belleville the first of the week.

Prof. Slie, the Topeka piano tuner, spent a day at College this week.

Prof. Mason's family feast on a box of muscadines sent them by Mississippi friends.

Dr. Mayo attended the meeting of the State Veterinary Association at Topeka on Thursday.

Mrs. E. B. Purcell and Mrs. Albert Griffin were present at public exercises yesterday afternoon.

Mr. and Mrs. Harrold mourn the loss of their infant child, which died quite suddenly on Tuesday.

Mrs. Graham spent several days in Wichita this week as delegate to a convention of the Christian Church.

C. C. Smith, Fourth-year, is the owner of a pen of Brown Leghorns that took first prize at the State Fair this week.

Postal cards have been printed and mailed to the members of the class of '93, asking for address, occupation, and prospects.

Dr. Mayo visited Agricola, Coffey County, this week to study a disease affecting the eyes of cattle in various parts of the State.

Phoebe Turner, who has been at home the past year, has returned to College, taking up her work with the Fourth-year Class.

C. E. Pincomb, Second-year, has added to the horticultural cabinet a lateral and a cross section of a grape vine four inches in diameter.

Prof. Georgeson is writing a series of articles for the *Kansas Farmer* entitled "To Prevent Smut in Wheat." The first letter is published this week.

Mr. J. C. Brock, Mayor of New Bedford, Mass., was an interested visitor at the College on Thursday, in the company of his cousin, Miss Wood, of Manhattan.

Miss Kennett, W. S. Forsyth, E. W. Gorham, G. R. Evans, G. Anderson, T. P. VanOrsdal, and C. P. Scott attended the State Fair one to three days this week.

Two members of the Fourth-year Class, E. A. Donaven and E. R. Vincent, have secured their claims in the strip, hoping to make farms out of them after graduation.

The Third-year Class met on Tuesday and elected the following officers: President, Miriam Swingle; Vice President, C. A. Johnson; Secretary, R. J. Barnett; Marshal, Myrtle Smith.

Prof. Popenoe started on Thursday afternoon for Chicago, expecting to spend two weeks at the Exposition. Assistant Marlatt will care for the classes in Entomology during the Professor's absence.

The foundation for the building to contain boilers, pumps, and engines for the steam plant is fairly begun, and the contractor intends to push the construction to completion as rapidly as is practicable.

The Board of Regents will hold its quarterly meeting next Tuesday afternoon and Wednesday. The State Board of Public Works will visit the College at the same time for consultation over the new buildings in process of construction.

The young ladies of the Domestic Department find plenty of work for busy hands in canning fruits and making pickles and preserves. The spicy odors daily issuing from the Kitchen testify in part to the superior quality of the delicacies.

The State Board of Public Works was represented at the College on Wednesday by Secretary Wyckes, and yesterday by President Scott, the former being accompanied by State Architect Davis, and the latter by Assistant Architect Perkins. All were much pleased with the progress of the work on the new buildings.

The Third-years who took part in the afternoon exercises were G. A. Dean, "Domestic Help;" R. J. Barnett, "Death of Sir John Moore;" F. A. Dawley, "A Start in Life;" B. W. Conrad, "The Dignity of Labor;" G. H. Dial, "A Description of George Washington;" Daisy Day, "The Story of Joan of Arc;" Flora Day, "How Joan Could Do What She Accomplished;" Geo. Doll, "Let Corn Be the Emblem of Our Republic;" C. D. Adams, "Death of Benedict Arnold;" D. C. Arnold, "Representative Bryan's Speech on Silver."

The series of Friday evening lectures on economic subjects will be continued during the term. For the next three weeks the following lecturers are secured: Friday, Oct. 13th, Rev. V. H. Biddison of Marysville, subject, "Interest—its character and tendencies; usu-

ry and preventives." Friday, Oct. 20th, Dr. J. E. Earp of El Dorado, subject, "The Nature of Wealth and its Relation to Human Welfare." Friday, Oct. 27th, Prof. A. S. Olin of Lawrence, subject, "Principles of Early Federal Taxation," with reference to opposing tendencies of later times.

The lecture of last evening was given to a fair audience by Pres. Fairchild. The subject announced was "Factors in production of wealth; true and false distinctions between producers and non-producers." The presence of wealth in a material object under control, actually needed, and exchangeable for other objects of desire, was shown to extend just so far as the object can be used to supply the various future wants of those controlling it. Production of wealth is then the moving of material objects by human effort toward the satisfaction of wants either by transporting the substance to the need, transforming its shape, or rearranging the elements into more satisfying combinations. All human energy—physical, intellectual, or moral—entering into these movements is productive if exerted as present labor or as stored-up energy in capital, skill, and discipline. Illustrations from experiences of the audience were used to show the actual relation of all these factors in production, so as to throw light upon the question, Who are producers of wealth? The conclusion was that all whose efforts are actually needed to secure the results obtained are producers, whether their efforts are directly or indirectly applied to the matter employed in production. The real non-producers are children, imbeciles, idlers, attendants upon luxury or vice, misdirected laborers for impossible ends or unneeded results, and chiefly, all who live by diverting wealth from its owners by robbery, fraud, gambling, or professional begging.

The ball game Friday afternoon between the Hamiltons and Websters drew a large and enthusiastic crowd of spectators, among them a fair proportion of young ladies, who watched the game with considerable interest. Of course the members of the two societies were there to give vent to loud and lusty yells whenever they had opportunity. The game was called at 3:45 o'clock, with Whitelock as umpire and the Websters wielding the bat. The first inning reminded one of a scientific game, as neither side made a score; but in the second the Hamiltons led out and surprised their opponents by making two tallies. Noble knocked a very pretty fly over in left field, and so far that there was "nobody there." In the third, Bittman knocked a splendid fly and succeeded in reaching home because the Hamiltons "muffed" the ball two or three times. Chris Johnson knocked one of his characteristic flies over in left field when the Hamiltons got to the bat. Cavanaugh made a splendid running catch back for a foul. The inning ended with three tallies added to each side. In the fourth, the Websters added another score to their list, while the Hamiltons ran in four. In the fifth, neither side succeeded in reaching home. During the sixth, seventh, and eighth the excitement increased, and the Hamiltons steadily gained in the number of scores. The game closed at six o'clock after the end of the first half of the ninth inning, the Hamiltons not going to bat. Some of the playing was good, but for the greater part it must be called an "off day" for the Websters, at least if one were to judge from the score—9 to 24. The players worked hard, and everybody enjoyed the game, which was generally spoken of as the most interesting one in the park for many months.

GRADUATES AND FORMER STUDENTS.

J. E. Thackrey, '93, was about College Friday.

Maude Knickerbocker, '93, is visiting her sister in Nevada, Iowa.

C. J. Peterson, '93, orders the *INDUSTRIALIST* sent to him at May Day.

C. W. Helder, Third-year in 1888-9, now a draughtsman in Chicago, called Friday.

D. H. Otis, '92, has resumed his work this week as assistant in Prof. Georgeson's office.

A. L. Frowe, Second-year in 1892-3, is teaching the Wyatt school in Pottawatomie County.

Margaret Purcell, Second-year in 1888-9, is attending Chicago University for the second year.

J. B. Thoburn, '93, visited at the College yesterday. He is in business with his father at Peabody.

S. W. Williston, '73, Professor of Paleontology at the State University, visits the College today.

F. C. Holcomb, First-year in 1889-90, writes from Chivington, Colo. where he is stationed as a telegraph operator.

G. H. Deibler, Third-year in 1886-7, called at the College to see old places and faces on Tuesday. He is building a church at Beatrice, Nebraska.

W. L. Morse, '90, writes from Blackfoot, Idaho, under date of September 30th, of "teaching school in a log shanty with a dirt roof." Snow fell there the night of the 29th.

W. W. Robison, Second-year in 1890-91, until recently butter-maker at Eilerslie, has charge of a large creamery at South Peachum, Vermont. He plans to take a course in dairying at Burlington, Vermont, during the winter.

J. E. Payne, '87, in post-graduate studies, writes his home paper, the *Olathe Patron*, of the wonderful growth of the College since he left six years ago. His county (Johnson) is represented here by sixteen students, and others are expected.

Our old friend E. H. Perry ['86] of Topeka, former editor of the *Eskridge Star*, was a pleasant caller Mon-

day. He was returning from Perry, Ok., where he secured a choice lot near the public square. Mr. Perry bought off his only contestant for \$10, and is naturally jubilant over his good fortune. He made the race on his three-minute mare, and says it was the most exciting event of his life. He immediately opened a wholesale and retail flour and feed store in the town which bears his name. He says it is a mistake about people leaving Perry and going to Wharton, that in his opinion Perry is the best town in the Strip.—*Alma News*.

The Weather For September.

Temperature.—The mean temperature for September, 1893, was 69.00°, which is 1.41° above normal. There have been fourteen warmer and twenty-one cooler Septembers in the past thirty-six years; the extremes being 74.21° in 1865, and 60.28° in 1868. The maximum temperature was 109°, on the 13th; and the minimum, 34°, on the 16th,—a monthly range of 75°. The greatest range for one day was 52°, on the 3rd; the least, 14°, on the 19th. The warmest day was the 20th, the mean being 83.75°; the coolest, the 25th, the mean being 50.50°. The mean of the observations at 7 A. M. was 60.27°; at 2 P. M., 84.93°; at 9 P. M., 65.49°. The mean of the maximums was 88.53°; of the minimums, 53.30°; the mean of these two being 70.91°. The mean of the first ten days was 70.68°; of the second, 73.42°; of the third, 62.90°. There was a light frost on the morning of the 16th.

Barometer.—The mean pressure for the month was 28.802 inches, which is a little below normal. The maximum pressure was 29.192, inches at 7 A. M. on the 25th; the minimum, 28.268 inches, at 2 P. M. on the 30th,—a monthly range of 0.924 inch.

Cloudiness.—There was one day entirely cloudy, four five-sixths cloudy, one two-thirds cloudy, one one-half cloudy, four one-third cloudy, one one-sixth cloudy, and eighteen cloudless. The per cent of cloudiness was 23. The first sixteen days were entirely clear except about an hour on the afternoon of the 9th, when .06 inch rain fell.

Rainfall.—The total rainfall for the month was 2.45 inches, which is .59 inch below normal. There have been nineteen Septembers with more rain and sixteen with less. Rain fell in measurable quantities on the following days: on the 9th, .06 inch; 19th, .22 inch; 27th, .18 inch; 28th-29th, 1.99 inches.

Relative Humidity.—The relative humidity for the month was 76.29: at 7 A. M., 88.13; at 2 P. M., 59.73; and 9 P. M., 81.00.

Wind.—The wind was from the southwest nineteen times, south thirteen times, north ten times, northeast, east, and southeast eight times, northwest three times, west once, and a calm twenty times at the hour of observations. The total run of wind was 7243 miles, giving a mean daily velocity of 241.43 miles, and a mean hourly velocity of 10.06 miles. The maximum daily velocity was 629 miles, on the 18th, and the minimum daily velocity 101 miles, on the 9th. The maximum hourly velocity was 41 miles, from 10 to 11 A. M. on the 18th.

Below will be found a comparison with the preceding Septembers:—

September.	Number of rains.	Rain in inches.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858.....	1	1.10	.....	69.63	98	50	.....	.....	.....
1859.....	6	1.82	S	65.86	96	36	.....	.....	.....
1860.....	2	1.35	SW	72.44	100	43	.....	.....	.....
1861.....	12	8.06	S	68.24	95	41	.....	.....	.....
1862.....	4	4.15	S	71.70	97	51	.....	.....	.....
1863.....	4	.73	S	72.56	95	29	.....	.....	.....
1864.....	5	2.30	SW	73.58	104	42	.....	.....	.....
1865.....	4	1.23	.....	74.21	90	49	.....	.....	.....
1866.....	10	6.23	S	61.38	90	40	.....	.....	.....
1867.....	6	3.50	SW	69.12	92	49	.....	.....	.....
1868.....	6	5.72	S	60.28	87	34	.....	.....	.....
1869.....	5	1.83	SW	61.26	83	41	28.86	29.25	28.50
1870.....	9	4.57	NW	67.29	92	52	.....	.....	.....
1871.....	3	1.92	NE	66.43	91	39	.....	.....	.....
1872.....	8	5.70	S	65.01	96	37	.....	.....	.....
1873.....	4	1.85	SW	65.97	98	38	.....	.....	.....
1874.....	7	4.53	SW	65.16	98	39	28.74	29.00	28.42
1875.....	3	2.85	SW	65.88	97	36	28.88	29.13	28.64
1876.....	6	3.11	SW	64.99	93	25	28.81	29.10	28.48
1877.....	2	1.52	SW	70.50	93	38	28.76	29.03	28.53
1878.....	5	3.22	S	67.13	93	37	28.78	29.14	28.28
1879.....	4	4.30	S	66.43	92	44	28.74	29.02	28.40
1880.....	7	2.52	SW	64.96	84	40	28.68	28.95	28.36
1881.....	4	4.92	SW	72.12	101	36	28.56	28.80	28.19
1882.....	2	1.20	SW	70.30	102	46	28.70	28.96	28.40
1883.....	2	1.26	E	63.10	94	43	28.72	28.98	28.50
1884.....	5	3.33	SW	72.65	93	48	28.52	28.82	28.17
1885.....	8	4.38	NE	66.70	96	42	28.68	28.93	28.23
1886.....	5	1.14	SW	71.71	101	40	28.93	29.24	28.48
1887.....	8	6.88	N	66.97	94	38	28.06	29.35	28.75
1888.....	3	2.86	SW	64.69	96	34	29.04	29.26	28.70
1889.....	4	1.92	S	63.19	101	30	29.06	29.39	28.78
1890.....	6	3.24	S	63.04	95	30	28.95	29.32	28.56
1891.....	3	1.46	SW	69.94	97	31	29.02	29.19	28.76
1892.....	3	.36	S	69.66	97	37	28.89	29.12	28.58
1893.....	4	2.45	SW	69.00	109	34	28.80	29.19	28.27
Means....	5	3.04	SW	67.59	95	39	28.82	29.11	28.48

WIND RECORD.

September.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889.....	5206	173.5	316	73	7.2	27
1890.....	5907	196.9	526	67	8.2	32
1891.....	7791	259.7	434	99	10.8	31
1892.....	7022	234.4	560	56	9.8	32
1893.....	7243	241.4	629	101	10.1	41
Means.....	6634	221.4	493	79	9.2	33

E. R. NICHOLS, Observer.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith.
Ionian Society.—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlett. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

September 29th.

The Ionian Society was called to order by President Lyman, and opened with singing No. 29. Miss Hayes led in prayer. In the absence of the Marshal and Recording Secretary, Misses Staley and Copeland were appointed to fill the vacancies until the arrival of the regular officers. The following ladies were initiated: Misses Mollie Grout, Louise Spohr, Minnie Spohr, Louise Stingley, Sue Long, and Hilda Leicester. Edith Lantz read an essay entitled "The Sophomore's Dream." The Oracle was presented by Minnie Copeland, followed by a piano duet by Misses Wilson and Helder. Lynn Hartley gave a declamation entitled "Perseverance." Miss Henry opened a discussion on the advisability of admitting both sexes to the same literary society. Ida Pape followed, and a number of the members also spoke. Miss Corbett read a selection telling of a school girl's trials and tribulations, entitled "The Tragedy of the Pickled Limes." Owing to the length of the selection, Miss Corbett was given the privilege of continuing the reading at the next meeting. Miss Lyman favored the Society with a solo entitled "Strangers Yet," Miss Helder at the piano.

I. R. E.

September 29th.

The Alpha Betas were called to order by Pres. G. L. Christensen. The program opened with a song, "Joy to the World," Grace Secrest, organist. Five new members were installed, after which D. Timbers delivered an interesting oration on "Strikes." Stella Kimball then entertained the Society with select reading. The question, "Should Complete Suffrage be given Women?" was argued on the affirmative by W. Harling and Grace Secrest. J. C. Christensen and Fanny Parkinson argued the negative. After reviewing the treatment of women in ancient times, the affirmative argued that woman suffrage in Wyoming, after a quarter of a century's trial, had accomplished great good, not only in suppressing many evil institutions, but in the purification of the ballot box; that were women allowed to vote our Legislature would "cease to be the biennial terror of its constituency." The negative contended that woman now exercises a greater influence than she can hope to gain when given the right of suffrage; that woman was created to rule the home, man to rule the government; that woman's throne is now so great that were all other thrones of earth placed one upon another they would not make for her a foot-stool. The judges, H. R. Miller, J. M. Westgate, and Miss Jackson, rendered a decision in favor of the affirmative. The Gleaner was presented by A. C. Havens. A variety of articles, including a thoughtful one on "Well Begun is Half Done," and closing with "A General Good Word for the Society," made up the contents of an excellent paper. After recess Sarah Cottrell favored the Society with a solo, "The Blue Juniata," after which extemporaneous speaking was indulged in. The program closed with an instrumental solo by Miss Steele.

A. E. R.

September 30th.

The Hamilton Society was called to order promptly at 7:30 by Pres. W. O. Staver. R. K. Farrar led in devotion. Minutes of previous meeting were read and adopted. Marshal Emrick administered the oath of membership to J. C. Bayless, G. T. Farley, and C. M. Gillette. Program of the evening was opened by Mr. Brobst's declamation. In the absence of F. A. Dawley, his chum, Mr. Carnahan, took his place on the program, and delivered a comical poem in a very acceptable manner. C. D. Adams showed his skill, ingenuity, and invention in a well-prepared essay on the "Burro." The debate, question, "Is the use of illustration in discourse of more influence than argument?" was argued affirmatively by E. L. Frowe and Geo. Dial. They claimed that by means of illustrations ideas are easily grasped, while argument is abstract; that all facts are drawn from material objects; that our best teachers use illustrations to prove facts, and the argument is drawn from the illustrations. The negative was argued by J. W. Holland and J. Poole, who mentioned that the previous speakers used no illustrations to prove their statements; that plain facts are clear, while illustrations are confusing. All public speakers convince men with sound argument. By argument we set forth a fact; if reasonable, it contains logic enough to convince one without any illustration, and that we can

not use an illustration without some argument. The judges, Messrs. Clothier, Jones, and Kellogg, decided unanimously in favor of the negative. Immigration was the subject of Mr. E. C. Joss' discussion, in which, among other facts, he stated that the U. S. contains 73,000 paupers, of which three-fifths are of foreign birth. The discussion was interesting and instructive throughout. Recess. In the absence of our musicians, our brother Billy Bryan volunteered to sing a solo, which was relished by all, and the hearty encore brought him before us once more in as pleasing a manner as before. Probably the most amusing feature of the evening was the Recorder by R. J. Barnett, motto—"Don't try to ride the fence." The title of some of the pieces were "Musings," "He Never Smiled Again," "Ruth—copied from third year Rhetoricals," "A Thrilling Experience," "A Wild Move." The paper was interesting and pleasing throughout, and Mr. Barnett deserves much credit as editor.

F. Y.

Economy on the Farm.

There is a class of agricultural writers that attribute all the evils of farmers to a lack of economy in these later days. They are fond of pointing to examples of men who have made money on farms, not because they excelled as farmers, but because they lived like dogs, had hardly any of the comforts of life, and made money simply because they spent none, and they hold up these men as examples to farmers. In our opinion, such men's lives are dead failures. If we are to measure a man's success in any calling merely by the amount of his savings, and take no account of the way in which his life has been spent and the way he has trained up his children for their future lives, we will make a great mistake. Most of the farmers so held up for models were not farmers at all, but men who squeezed all they could out of their land, and had so little faith in farming that they invested every cent saved in stocks and bonds and mortgages, and never in their own business. There is no more reason why a farmer should be niggardly than there is that a man in any other business giving an equal income should be. And yet, when a town man, with no more income than his neighbor on the farm, dresses neatly, drives a good horse, and looks after the comforts of his wife and children, it is thought all right. But if the farmer does likewise, and some unforeseen misfortune overtakes him, people say it was extravagant living at the bottom of it, and they preach the stern necessity of economy on the farm.

Of course no one should live beyond his means, whether in town or country, but decent economy is never niggardliness. There are many good farmers who make the mistake of imagining that all the money spent in making the home beautiful and comfortable is so much lost, and they will invest thousands in barns and conveniences for stock and stock feeding, and keep their families in cramped and uncomfortable quarters, and never think of devising improvements to facilitate the endless labor of their wives and daughters. Make all the improvements in the farm buildings possible, so as to make stock comfortable and stock feeding economical, but do not neglect the most important live stock on the place—your own family. The old Dutchman's motto, that "The barn makes the money, while the house spends it," was the motto of a mean man. It should rather be, "The barn makes the money so that there may be plenty in the house." It may not be best that your boys should remain on the farm. The world may have other work for which they are better suited. But be careful that you do not make them hate their home, and long for the time to leave it and its niggardly economy behind, and go to the bad in the reaction. Give your boys and girls the best education your means will allow, and to do this spend the money you intended to hoard for them. The education will be better for them than the money. If their education leads them into other lines of effort than farming, then thank God that your boy has found his place in life. Some day, amid the busy cares of life, he will turn back lovingly to the old farm, and will be more likely to spend his declining days on the farm than the boy who only remembers his boyhood on the farm with loathing. But in nine cases out of ten the boy brought up in a happy farm home will imbibe such a love for farm life that a short test of the worry of the life in town will bring him back content to remain on the farm.

Economize, of course. Every one should make his expenses in business bear the smallest possible percentage to his sales. Economize so as to make all your work be more effective. But economize everywhere else before you stint the souls under your care.

There are points, too, in farm economy when to save a penny is to waste a pound. The man who sows only half as much clover seed per acre as he should, because clover seed is high, saves in the cost of seed only to lose ten times as much in a crop of hay, and many times as much in the benefit his land would have derived from the clover. The man who cuts his cows' rations short because bran is high saves the cost of the bran, and not only loses in milk, but in the health of his animals. The man who saves the cost of comfortable buildings for his cows keeps them warm, if at all, at an expense for food that would soon build all he needs once for all. The man who employs a poor hand simply because he can be had cheaper than a better man, saves in wages, perhaps, but generally pays double in the loss of efficiency. The man who deprives his family and himself of good reading saves the cost of the books at the fearful price of mental starvation. The man who stints his wife in help for her work saves the wages of a domestic by the slow murder of her he has sworn to cherish. The man, whether on farm or elsewhere, that forgets that the means in his hands were given him by God to be used aright, and imagines he is under no responsibility for its use, will have a fearful account to give hereafter.—Prof. W. F. Massey, in *Practical Farmer*.

Reading Matter for the Farmer.

"How many papers should a farmer take?" is a question asked us in a letter recently received. In a general way we should reply that he ought to take as many as he can afford, but lest our direction be misunderstood we ought to perhaps qualify it by saying that he ought to subscribe for such publications only as interest the members of his family. To start with, if he is a dairy farmer, he ought to put one or two dairy papers on his list, then to keep track of what his acquaintances in a neighboring town or those in his own locality are doing, he ought to subscribe for his local paper, and next some metropolitan weekly to keep abreast of the general news of the day. That the higher intellectual wants may be looked after and cultivated, he should subscribe for some publication devoted to literature, home, social life, etc. If a member of the family is not interested in all of these papers, some one of the lot is sure to invite reading and examination. The list can be enlarged, of course, according to the suggestions of the household, but before a decision is reached it is always well enough to send for a sample copy. No one, in these days, need have any fear of surrounding himself with too much literature, and where the rates in so many instances are merely nominal, a little money will go a great deal farther nowadays than ten, aye even five, years ago.—*Dairy World*.

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BOOKS AS TOOLS.

BY JOSEPHINE HARPER.

AN old saying "of the making of books there is no end" is particularly true of the present time. Books are so numerous and cheap that we are in danger of not appreciating their real value.

Books are written, printed, bought and sold by different people for different purposes. Some are entirely ornamental and occupy conspicuous places in parlors and drawing rooms of the wealthy. Others are written for use and with a view of permanence to benefit some one.

Ruskin says, that if an author were to define his book he would do it thus: "This is the best of me, for the rest I ate and drank and slept, loved and hated like another, my life was as the vapor, and is not; but this I saw and knew, this if anything is worthy of preservation."

We have often been told that the best use we can put a book to is as a friend. If tired it will rest us, if down-hearted it will cheer us, if lonesome it will be a companion for us, and is even better than a friend in the flesh, as it never resents our ill-treatment of it, pays no attention to our moods or little frailties, never repeats to another what we never ought to have said. In short is the same true and trusted friend at all times and under all circumstances.

Having made friends of books, the next best use we can make of them is as tools, and a large part of the books made are for this particular purpose. Under this head come all school books and reference books of all kinds. Other books are tools or not, according to the use we make of them.

A grammar is as much of a tool in the hand of a student as the saw in the hand of the carpenter. A commentary is as much of a tool to the preacher as a plow is to the farmer.

The quantity and quality of corn or wheat raised on a piece of ground depend to a great extent upon how the man who plowed that piece of ground handled his plow. If the plowing was poorly done the grain raised will be of inferior quality.

The beauty, symmetry, comfort, and convenience of a house depend in a measure upon the use the carpenter made of his saw. So the quality of a sermon is good or poor according as the minister has used his tool, the commentary.

The student's tools are his books, and his usefulness to himself and mankind, not only while a student but all through life, depends upon how he uses his tools.

Young people do not study geometry for the only purpose of learning a truth in mathematics, but also for the higher purpose of disciplining their minds, and education is simply a well disciplined mind.

Habits of Reading.

Circumstances favor the teacher in this, that every occupation of the mind, both in and out of the direct lines of schoolroom duty, may be made to enhance his capacity and value. I do not believe that any men or women appreciate their "time to themselves" half so thoroughly as do the teachers, and nine out of ten teachers, intent upon relaxation and recreation after the day's routine, find it in the ever-new joy of reading.

No teacher has yet lived to find that his reading has been either too general in character or too profound in special detail to be of use sometime, somewhere. At no time in the history of learning have there been such opportunities for the forming of such a variety of tastes, according to the inclination or environment of the student. One may determine upon mastering the broad principles of abstract sociology, or he may wear away the years of a long life in studying the origin, growth, and effect of the New England "town meeting." I have nothing to say about the demerits of either scheme; I want to talk a little about methods and habits of reading, in whatever direction the energies may be expended. There is much in knowing how to read.

The very wealth of our resources makes us prodigal of our forces, when it should have exactly the opposite effect. There is so much to read! Our periodical literature is enough to dismay the most courageous and determined student. It is an hour's work to read the headlines of a couple of our modern daily newspapers, and to glance at the table of contents of half a dozen popular monthlies is about as dazzling as a look at the stars on a windy night, and as confusing as the attempt to choose the most lovely blossom out of five miles of country roadside in June. In this very diversity and diffuseness of the matter at hand is our difficulty, for it engenders and develops a habit of superficiality and cursoryness which goes far to reduce the value and effectiveness of reading as a mental stimulus and drill. In an evening's

reading one may easily have accomplished the feat of absorbing, say, an editorial of 500 words on the annexation question, 2000 words from the pen of a scientific specialist upon the pathogenic bacteria, 1000 words descriptive of some difficult feat of engineering in the Rockies, a few lines of comment upon the Home Rule situation, and the monthly installment of the current historical novel. With a continuation of such habits, unless there be a rigorous discipline of the mind above it all, the result can only be an acute mental dyspepsia and indigestion. Such habits suggest a diet of mince pie and coffee.

And what is the remedy? There may be several. I have one which has proven simple and effective, and which has enabled me to accomplish a great deal of hard work in my spare time with no bad results. At the age of nineteen I began the study of law, following it persistently, for eight hours a day, through the succeeding year. Never have I had such valuable mental training. This experience has suggested that the cure for the evil above mentioned can be found in determining upon some one particular study, presenting real obstinate difficulty of mastery, and taking it in hand with the fierce and ever-presenting determination of following and subduing it. It need not be law; a language is good; a political history of some great government is better, perhaps; a branch of mathematics will serve admirably. Let it be something which requires, demands, the closest application of the mind. It should not occupy all of the time out of school hours; half an hour out of every day will suffice if during that allotted time every available faculty of the mind is concentrated with all the power of the will upon the business in hand. It is the habit of concentration which cursory reading most endangers, and which the pretentious study of one difficult branch of knowledge will tend to restore.

Through this half hour's daily study let there run a purpose, the purpose of grasping everything which passes before the eye, and of remembering it. Do not set yourself the task of reading a given number of pages in a given time. Make up your mind that you will grasp the detail, and that you will take all the time necessary for the accomplishment of this end. If you must spend two evenings over a page descriptive of some great political crisis, do it willingly. The returns will justify it.

A single study is far better than two or three for this purpose, if it be rightly followed. Do not carry the work to the point of complete weariness at any time. Maintain this vigorous effort of mind just so long as the mental vision remains clear; when it begins to blur, stop and take up your other and less serious reading. You will soon find that the habit of concentration is fastening itself upon you, and that you are reading everything, even the lines of a floating newspaper paragraph, with the same fixedness of attention. The memory will be greatly strengthened, and there will be born to you a new confidence in your own capacity and power.—W. R. Lighton, in *Journal of Education*.

Colleges Getting Nearer the People.

Another College joins the ranks of the institutions making special effort to teach those farmers who cannot long remain away from home and yet desire to get the benefits of special instruction. The Kansas Agricultural College has arranged for a special course of lectures for farmers beginning on the second Tuesday in February. There will be three lectures each day. The College force of instructors is drawn upon to present practical topics in this course of lectures, and in addition lectures by practical specialists are provided. If the farmers of Kansas will only make good use of these lectures the College authorities will no doubt be greatly encouraged and stimulated to still better and more extended efforts.

The present movement of farmers toward improving their vocation by a better knowledge of the subject is most significant. Heretofore a very considerable amount of the energy of agriculturalists in certain sections has been wasted in Don Quixote efforts to remodel the whole world. Now they are beginning to grasp the idea that sometimes a man can make a good deal more money by reforming that little portion of the earth inclosed by the boundary fences of his own 160 acres than in spreading out over a continent. That man succeeds best in reforming the world who spends at least twenty-three hours out of the twenty-four at his own hearth-stone, studying diligently and working at his own particular business.

He is looking more and more to the better class of agricultural papers, to the farmers' institutes, and to our agricultural colleges and experiment stations for light and helpful guidance. He realizes that our schools of science have been of vast benefit to the great arts of mankind, and that farming proves no exception to the general rule that "knowledge pays." Sitting at his comfortable fireside with his papers and books before him he grows earnest in the desire for more knowledge of his vocation, and this leads to the wish to pursue a definite line of studies.

And the agricultural college, learning more and more of the farmer's life, his wants and habits of thought, and seeing this need of the farmer provides special courses for him, such as is seen in the lectures the Kansas College has instituted, the Pennsylvania College in its Chautauquan agricultural course, and our other institutions in the various helpful lines, re-

cently laid out. Our agricultural colleges were creators of slow growth at first, and their utility was doubted most of all by the very class they were designed to benefit. Because of the vast interests for which they labored, it is but natural that the movement toward better things in our agricultural education has been slow, but it is coming, and coming surely.—*Breeders' Gazette*.

The Farmer's Honey Crop.

Why farmers do not try to have a few stands of bees is surprising when we consider the cost of keeping them, which is so little. They may become a subject of interesting study if one is so inclined, in addition to the profit of having a delicious article of food for the table. An Iowa correspondent says upon the subject that if honey is a desirable article of food, or a luxury worth setting before our family and friends, the question is, "How shall I obtain it?" Shall the farmer who owns the range over which bees forage, raise hogs and cattle and grain for market, and with the proceeds thereof buy his honey, or raise a few bees himself and be independent of the grocer or specialist in honey production? Some argue that it is better to leave the production of honey to the specialist altogether. They say he can produce it more cheaply than one who has other business. That is true in some sense. It is also true that the market gardener can raise cabbage and strawberries more cheaply than the farmer does. Shall he therefore leave the growing of all garden truck to the specialist, and buy his vegetables and fruit? The main difficulty in both cases is, if the farmer does not produce them himself, his family is very liable to go without the greater part of the year.

I have noticed that those farmers who think they cannot afford to "potter" with a garden or bees have few of the luxuries which these furnish. Luxuries, did I say? Necessities, if health, comfort, and happiness count for anything in this world. Honey is a luxury, but it is healthful and nourishing. It is not a necessity in the usual sense of the word, nor is any other sweet. Sugar is so generally used in this country that we regard it as a necessity. But it is not. I suppose there are millions of people who scarcely taste sugar. And there are thousands of families, largely farmers, too, in this country who scarcely know the taste of honey. They do not keep bees, and when they wish to gratify the taste for sweet, buy sugar or glucose syrup, because it is cheaper in price than honey. But why shouldn't the farmer produce his own honey? Is it because of the belief that greater skill and knowledge is required to make this branch a success than other departments of the farm? If this is the prevalent notion, I wish to dispel it. It does require study and some skill, but not more than to raise good stock, or to grow good crops. If a farmer raises nothing but scrub cattle and hogs, and gets a good crop of corn only when everything is favorable, he will probably never have much money to sell, and will doubtless conclude that "it's all luck, anyhow."

But if he knows a good cow from a poor one, and knows how to raise the good one; if he knows how to get a good crop of corn when many of his neighbors have only nubbins, he can master all the intricacies in bee-keeping without lying awake nights, or infringing on his time in harvest. I believe the person who gets the most pleasure out of producing honey is the one who does so in conjunction with some other business. His whole soul is not wrapped up in the one dollar-and-cent idea. It is chiefly produced for his own table, or for the pleasure of his friends. I wish, however, to caution the reader, if he thinks seriously of getting bees, to inquire if his locality is adapted to the production of honey. Not every prairie farm is an ideal bee-paradise. If no linden grows within a mile or two, and if white clover is not plentiful enough to yield a surplus, then two of the chief sources of white honey in the North are wanting. Still there may be an abundance of other flowers for a few colonies. Spanish-needle, heart's-ease, the asters, and a great variety of other wild flowers can be utilized and made profitable if not too many colonies are kept in one locality. If a person who wishes to keep bees has had no experience, he should not buy more than a colony or two to start with. Spring is the best time to purchase. Buy as near home as possible. Talk with some one who has made the subject a study. Buy a good book on bee-keeping, and after a little, if the subject proves interesting, subscribe for a bee-paper. You will grow with the business naturally, furnish your table with a dainty luxury that takes the place of sauces, is always acceptable to company, and at the same time the study of the subject will prove to be both pleasant and profitable.—*Western Rural*.

Unprotected Farm Machinery.

A binder's life is not determined by the number of acres cut. I know of one binder that cut over one thousand acres before it was worn out. It was placed in shelter as soon as the work of cutting was done. The average life of a binder is about five years, cutting from thirty to fifty acres yearly. I saw a new binder this year taken from the wheat-field, which was adjoining the barn, and placed under a tree in the clover-field. Last year the same man placed his binder under a tree after harvest; and there were twenty-five head of cattle and this binder under one tree during July, August, and September. I do not know which suffered the most, the cattle or binder.

If any one will observe he will see mowers, corn-plows, binders, and hay-rakes left out in the field during hot weather. I also notice that in almost every instance the farmer who neglects his imple-

ments is behind, and says farming does not pay. How long will it take a man to fill a barrel with water if it is leaking between all the staves? How much will a farmer gain if he must buy a new outfit every three or five years, with wheat at fifty cents per bushel? I know a hard-working man, who has long been a renter, who scarcely ever puts a tool in shelter, and who keeps a large stock of hogs, cows, and colts all together. He has had a chattel mortgage on his horses for many years. But talk, lectures, and papers will never cure such men. Predestination holds good for some farmers; they are destined to be poor. "The poor ye shall have with you always." But there is no excuse for being so poor. If they would sit under the shade of a tree one day every week and think of some better way, and follow it, they would be gainers. It appears there is no thought—all elbow-grease misdirected.—*Michael Jones, in Farm and Fireside*.

The Agricultural Press.

Mr. Turner makes some good points for farm papers in a recent article, but the trouble is that the very ones who need to see them most will never do so. As they do not believe in "book farming," they do not read the papers. They honestly believe that there are no helpful suggestions to be found in a farm journal for them. But I have run across a specimen of another class that does not believe in farm papers, and the reason assigned is certainly complimentary to such papers as the *Farmer*. This man is a hard-working and pushing farmer. Said he: "I would like to know why such men as Terry are 'durned fools' enough to try to help others get big yields of potatoes. We are growing too many potatoes in this country, anyway, for your and my good. If others get lots of potatoes, we must take a low price. It gets me 'wrong' to see men telling the whole world about a good thing when they get hold of it. I have no use for farm papers. They are doing a great deal of mischief."

Just observe the specimen I have unearthed, please. And yet, did not this man voice a feeling that is found here and there in most communities—not in condemnation of the press, exactly, but one of desire to get ahead by having others handicapped. There is a desire to keep a good thing to one's self that manifests itself now and then in such frank expressions as those used by the farmer quoted. They would like to muzzle Mr. Terry, Mr. Gould, Prof. Massey, and Mr. Greiner, trusting to their own ability to get hold of more good points by experiment than would their less fortunate neighbors.

We need better agricultural educations, and, as Mr. Turner says, such knowledge is not necessarily gotten in an agricultural college; but if a young man studies all the answers to scores of questions put each week to the four noted writers named above, he can not well help being benefited, no matter how poor a student he may be. I have gotten many facts from farm journals that helped me greatly in my work. So has every reader of farm papers who is studying his business and trying to do better work each year. Many questions arise on the farm that each man must settle for himself, but he can be helped to a right decision by study of the experience of others. Especially does a man want to broaden himself enough to be ashamed of the narrowness that would lead him to hide any fact he may get hold of by experiment or observation, through fear that another would be benefited thereby.—*Alva Agee, in Practical Farmer*.

The Roads Deterred Him.

A gentleman who had enjoyed a suburban home where the roads were kept in excellent condition, was offered a big price if he would part with his ground, the purchaser wishing to plat an addition to the city. The offer was accepted, and the former owner of the "Home on the Brookside" became a prospector for new but larger premises. He visited several farms offered for sale, finding it difficult to select one that suited him in every respect.

First, the farm must be well improved, good houses and barns, must have fruit—he was too old to think of growing apples, pears, peaches, etc., at his time of life; true, he had many years prospectively, but he wanted to enjoy the fruit now.

Second, the farm must be well underdrained. He could not think of spending four or five years to get rid of the excess of water before he could grow the best crops.

Third, the land must be in a good state of cultivation, properly divided as to crops and pasture, and fences in good condition.

An agent showed him where almost every want which he had named seemed to be met. The land lay well, was thoroughly underdrained, had an abundance of fruit, with beautiful pastures, substantial and tasteful farm buildings, a good farm-house; every thing in order—lovely. The agent thought there could be no objection, asked about the prospect of a sale. The prospector shook his head. The agent was astounded. Would the place not suit?

"It is certainly all that you have described, and has the reputation of being very healthy—no malaria, water abundant and delicious."

The trees waved their leafy branches in every part of the landscape, the air bore the fragrance of a thousand flowers. What could be the objection? The answer was sharp, short, and decisive:

"I could not endure for one season these terrific roads."

Miserable, unkept highways are worse than a plague to investors in rural homes.—*Drainage Journal*.

FARM NOTES FROM VARIOUS SOURCES.

There can be no better sign of promise for the future of our agriculture than that our farmers and our farmer's sons should appreciate the value of a higher education, especially of an education that applies directly to the occupation which they propose to follow.—*Mirror and Farmer*.

There is no use trying it—you cannot crop land continuously without feeding it. Perhaps you have been trying to do so, and that is the reason you think farming doesn't pay. It never will pay, in that way. Begin now, if you never have done so before, to study how to feed the soil.—*Mirror and Farm*.

When one has a really fine product it will pay him to go a long way to find the proper market. As an instance, California fruit-growers find a profit in shipping some of their best fruits to London. Poor products would not sell for enough to pay the freight for such a distance.—*Mirror and Farmer*.

It will not pay to keep stock simply for the purpose of manufacturing fertilizers for the farm, but the man who neglects this product of his stock entirely will find that he has neglected one of the most important sources of profit. The byproducts of the farm are matters that we can not afford to slight.—*Farmer's Home*.

Do not underestimate the value of the wood ashes produced on the farm this winter, and so let them go to waste. They are valuable in the garden, and for corn and wheat as well, and the value of a liberal application of them will be seen for years. Keep covered until you are ready to apply them to the land, so that they do not leach.—*Farmer's Home*.

Do not be led away by stories of remarkable profits made in any special line of farm industry. They are made only by having a thorough knowledge of that particular work, and by giving it the very closest attention. Unless you can start in with the same kind of capital, do not expect to make as much money at it as the old hands do.—*Mirror and Farm*.

However important it may seem to you to get large money crops from your farm for the present, you cannot afford to follow any system which has not due regard for the future of your land. Agriculture is a matter of further concern than this year or next, and any one who takes a shortsighted view of it will do so to his future sorrow. When planning for any crop, ask yourself what its effect on the land will be, and whether, from that point of view you can afford to grow it.—*Farmers' Home*.

Carefulness and exactitude in speech are sometimes characterized as affectation and mere pedantry, but say what some people may, it is unquestionably the unflinching mark of culture. No one thoroughly and lovingly acquainted with the literature of his language can regard propriety in its use with contempt. The purity and harmony and rhythm of his native tongue are as precious to him as the perfect rendering and interpretation of music are to the musician; and to the preservation of the English language in its integrity, it should be the duty and pleasure of every individual lover of it to contribute.—*Exchange*.

There are two sides to this matter of abundant crops and low prices. Let us look at the workingman's side for a moment. At the present relative prices of wheat and of labor, five day's labor in the harvest field at wheat stacking, or eight days at any labor, will provide bread for a family of five for a year. Live and let live is a grand motto, and it should be a source of satisfaction to the American farmer that he is able to make the conditions of life so easy for the vast army of workingmen who are engaged in other industries. The best possible condition of agriculture would be that in which the farmer gets a fair return for his labor, yet with such abundant harvest and such low prices that every honest and industrious workingman could be well and abundantly fed with the best products of the soil. When the prices for food staples are up some one has to suffer.—*Farmers' Home*.

Waste in Fodder.

Western people are getting aroused to the fact that they have been wasting more fodder than was needed for all the stock they keep. The *Prairie Farmer* says: "We know of no other such systematic wastefulness practiced on the farm as has gone on from year to year in the cornfield. The value of the corn fodder, properly cared for at the proper time, is fully equal to half the value of the ears of corn. Some have placed a higher estimate than this on its value. The value of that portion of the fodder that is utilized or used is not to exceed one-half its value if cut and cared for in season. This is the great leak on the farm as farming is practiced in the West. There is no better feed than good corn fodder and no forage for which stock of all kinds has a greater relish. There is, or rather has been, an excuse if not a reason for this waste. It all lies in the fact that it required an immense amount of work to properly care for the fodder. Our cornfields are of such vast extent that so long as all the work of cutting up corn had to be done by manual labor it was practically impossible to cut it at its best or in many cases to cut it at all. Inventive genius has at last been applied in this direction and machinery operated by horse-power can now be used for the purpose of cutting corn. Two advantages are gained: First, it can all or nearly all be cut, and second, it can mostly be cut at the proper season to be of the greatest value for feeding. It will more than take the place of hay which can be baled and shipped to our home markets, and this year largely to foreign markets. There are a number of these corn-cutting machines on the market and it is a matter of congratulation that they are neither complicated nor expensive. That leak can now be stopped."

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Mr. David I. Moore, of Oketo, visited the College with Mr. Secrest on Thursday.

Dr. Mayo is elected Secretary of the State Veterinary Association for the coming year.

Two foot-ball elevens are organized, and the first practice game was played yesterday afternoon.

Prof. Failyer was called to Belleville the first of the week to give expert testimony in a liquor trial.

Prof. Hitchcock has a class of eight graduates in special botany, meeting them daily at the third hour.

The INDUSTRIALIST and the Cosmopolitan Magazine at the hither to unheard of low price of \$1.75 a year.

Pres. Fairchild is requested to present a paper before the World's Agricultural Congress on "College Courses in Agriculture."

The Board of Regents were surprised to find excellent and beautiful clusters of grapes awaiting their testing capacity, at the meeting on Tuesday.

It isn't much wonder that Kansas has a reputation as a windy state. It furnishes support for 9,216 insurance agents, to say nothing of book agents.

Several post-graduate students have organized a class in Latin with Assistant Carleton as instructor. They meet two evenings a week for recitations.

A division of the First-year class tries English Analysis with Instructor Jones next, while Prof. Olin trains the Fourth-years in preception and memory.

Prof. Lantz has been invited to present in the Agricultural Congress at Chicago a paper upon road-building, and may attend that gathering next week.

Regent Street, of Oberlin, Kan., left on Thursday night for Chicago as delegate from the College Board of Regents to the meeting of the College Association.

Prof. Mayo has been elected delegate from the State Veterinary Association to the International Congress of Veterinarians in Chicago next week and will attend for a few days.

Regent Secrest having come to town on Monday, a day in advance of the rest of the members of the board, occupied the forenoon of Tuesday in visits to several classes.

Prof. Hitchcock has been elected an associate member of the Academie Internationale de Geographie Botanique. The number of associate members is limited to sixty.

Prof. Popenoe expects to remain at Chicago next week to enjoy the gathering of college men in the Association of American Agricultural Colleges and Experiment Stations.

Regent Wheeler, of Nortonville, Kan., has gone to Chicago, where he will take part, as a delegate from the State Board of Agriculture in the World's Congress of Agriculture.

A considerable number of strangers have lately visited the city and College with the idea of locating here for the purpose of securing our excellent educational advantages to their children.

A drizzling rain on Wednesday night and Thursday morning accompanied a decided change of weather toward winter. The heat of the two previous days had suggested the extreme of summer.

Professors Georgeson and Mason have been granted leave of absence for a few days at the World's Congresses of Agriculture and Forestry if they can arrange to leave their work at College.

Prof. Olin will care for the class in Psychology during the President's absence at the meeting of the Association of American Agricultural Colleges and Experiment Stations at Chicago next week.

The Regents spent the entire forenoon of Wednesday in visits to class rooms, laboratories and shops. The Faculty enjoyed immensely this unusual attention, wishing only that more time might be given to each class.

Bulletins will soon be issued by the Station upon the vineyard tests of several years, upon oats and corn in 1892 and 1893, upon sorghum and beets for sugar content, and upon veterinary investigations.

Hon. S. O. Thatcher, of Lawrence, will give one of the lectures in the economic course this fall upon the subject: "The credit system,—its uses and dangers in exchange." The date will be announced later.

The good time to which the Third-year Class looked with such anticipation was more than realized when fifty of them assembled at the home of one of their number, Miss McKeen last evening. After the very excellent refreshments all enjoyed listening to songs and toasts appropriate to the occasion. Games of various kinds were indulged in and at a late hour

the Class departed feeling that 'tis good to be a Third-year, and with words of praise for Mrs. McKeen who did so much toward making it an evening to ever be pleasantly remembered by the Third-year Class.

The Fourth-year Class met Friday and elected officers for the present term as follows: President, I. Jones; Vice-President, Stella Kimball; Secretary, Sadie Moore; Treasurer, John Stingley; Marshal, Mary E. Lyman.

The steer feeding experiment of the coming winter will include a comparative test of dry and soaked shelled corn fed out of doors with ordinary shelter. The barns will be occupied by the sets of yearling, native, and thoroughbred steers to be experimented with during the next two years.

Regent Stratford addressed the students on Wednesday at Chapel in an earnest appeal for better appreciation of the College work among the farmers of the State, when shown by greatly increased attendance. He hoped to see the halls and classrooms crowded till the State must build more buildings to accommodate the students gaining an education here.

Baron Gustav Freiherr von Berg, of Kapuvar, Hungary, is visiting the College and neighboring farms to study agricultural methods in this corn and grain raising region. He is himself owner and manager of a farm of forty thousand acres. The Baron found Prof. Walters an efficient aid in his researches from being able to converse in German much more readily than in English.

Dr. J. E. Earp will give the lecture of next week in the economic course upon Wealth, its nature and relation to human welfare. The time is Friday evening, Oct. 20th, at 7:30 o'clock. Those who heard his former lecture will be glad to listen again to a thoughtful man upon so important a theme. Those who were prevented from attending before will doubtless help to fill the Chapel this time.

On Saturday of last week, Herr Fabian De Maurovich, Secretary to the Minister of Agriculture of Hungary, visited the College to study the Kansas methods of wheat raising. He took especial delight in the "Big Injun" sulky plow and the "Daisy" cultivator, and stated that he would take these implements with him to Europe. In the afternoon Prof. Walters escorted him over several model farms in the vicinity.

On Friday evening, Oct. 27th, at 7:30 p.m. Prof. A. S. Olin of Lawrence will deliver the weekly economic lecture upon the topic, "Early Principles of Federal Taxation". The lecture will be historical in character, presenting various tendencies of later times and their effects upon National welfare. Prof. A. S. Olin is a brother of our Prof. O. E. Olin, and for this added reason may count upon the interest of our students and neighbors.

Board and Faculty with their wives tested the sample breakfast prepared by the special Cooking Class on Thursday evening, pronouncing the task well done. Misses Haines, Waters, Cottrell, and Stokes, post-graduates, presided at the four tables set in the sewing-room and the rest of the class, Fourth and Third-years, waited upon the tables. This means of training in handling tables with guests is highly prized by the young ladies who gain its privilege.

The members of the First Division of the Senior Class, who took part in the Friday afternoon exercises were, F. W. Ames, "Are We Growing less Religious?"; Clara F. Castle, "Advance in Physical Culture"; Geo. L. Christensen, "The Future of Water Power"; Lorena Clemons, "An Imaginary Visit to Japan"; J. C. Christensen, "The Work of the Archaeologist"; Martha Cottrell, "The Canning Industry of the United States"; J. W. Evans, "Discontent"; Sarah E. Cottrell, "Bread."

The basement walls of the new Library and Science Hall are slowly rising, and show a massive character, not before seen on the premises, indicating that the building is to be a great improvement in construction upon former structures. Messrs. Ulrich Brothers show their familiarity with such work by handling their forces admirably. Two huge derricks command all parts of the building, and all materials will be hoisted by steam, the heavy stones of foundation and belts being dropped into place as gently as power can handle them.

Chaplain Biddison, of Marysville, delivered the third lecture in the economic course last evening. His subject was "Interest, its character, and tendencies; usury and preventives." Taking for a text the controversy between Antonio and Shylock, in Shakespeare's "Merchant of Venice," he said that interest has always had a bad character, being prohibited between the Jews, and disparaged in every time down to the recent centuries. By calculation of the enormous sums to which a small amount would accumulate, with interest compounded annually at various rates, he showed the tendency to eat up the products of labor, and claimed that there could never be, since money does not produce as money, sufficient money in the world to pay back what was borrowed, with any increase. The various reasons for the existence of interest were disposed of by brief reference, and the conclusion was reached that all advantage in the use of property belongs to the one whose labor has been made profitable by its use. As to usury, the conclusion was that no line can be drawn between proper and improper interest, which is not purely arbitrary. Preventives are found impracticable, it being next to impossible to convict a usurer where the witnesses are parties to the contract. The only remedy, the speaker thought, was for government itself to provide for the loan of money at very low rates of interest, thus preventing the possibility of high rates by individuals, saying that it was better for government to break the law of justice a little in order to prevent the extreme injustice of individuals. The lecture was listened to attentively by a fair audience of more than a hundred, most of whom were students.

GRADUATES AND FORMER STUDENTS.

E. C. Thayer, class of '91, made a short call this week.

Nellie McDonald, '91, greeted friends in chapel Monday morning.

Miss Olive Voiles, Second-year in 1892-3, visited her friends at the College on Friday.

Louise Reed, '91, writes from Selkirk of teaching in "the driest part of the United States."

B. H. Pugh, '92, writes from 22 Mt. Auburn street, Cambridge, Mass., ordering the INDUSTRIALIST.

T. W. Morse, Third-year last year, was visiting at the College Saturday. He is teaching near St. Mary's.

Albert Todd, '72, Lieutenant First U. S. Artillery, has been transferred from Fort Sheridan, Ills., to Fort Hamilton, N. Y.

L. S. Strickler, Third-year in 1890-91, writes from 1211 West Ninth Street, Los Angeles, Cal., that he is still in charge of the wholesale yards of the Crescent Coal Company, and a "personal financial depression alone kept him from the College, and a side trip to the World's Fair."

Board Meeting.

All the members of the Board took part in the Board meeting this week, which continued from Tuesday afternoon to Thursday evening. More than the usual time was given to visiting classes, and looking into the routine of accounts, and the general methods of the College.

Tuesday evening was given to a joint meeting of the Board and Faculty, in which all the departments were represented, by statement of progress and need of equipment. Provision was made for current supplies in College and Station, and special allowance was granted as follows:—

For the Farm Department, \$25 for a Poland China boar, and authority to purchase ten steers, with hogs to follow, for a feeding experiment; \$20 for lumber for repairs on the piggery; \$25 for shed for steer feeding.

For the Horticultural Department, \$55 for roots to be used by class in apple grafting.

Department of Industrial Art, \$15 to secure plans and specifications for instruction in architecture.

Museum, jars and stands, \$20.

Department of Domestic Science, \$10 for utensils.

Military Department, repair of guns, \$2.00.

Other wants and estimates were laid over till the next meeting for lack of funds to meet all wants at present.

The President was authorized to secure the lease of the Williston place, upon terms agreed upon, for the next five years, as a necessary extension of the farm.

The fees hitherto charged for lessons in instrumental music, were abolished, instruction hereafter to be given free of charge, under such restrictions and directions as the Faculty may provide. The salary of the professor of Music was accordingly raised from \$600 to \$1200 per annum.

Leave of absence was granted to Profs. Lantz, Georgeson, Mayo, and Mason, to attend, if they desire, the various departments of the Agricultural Congress at Chicago.

The Horticultural Department was authorized to displace five rows of trees on the east side of the old apple orchard, by an extension of the vineyard.

President Fairchild was authorized to use the heater removed from the propagating pits in improving the heating apparatus of his dwelling.

Authority was granted to Prof. Hood to provide for the packing up of the exhibit at the World's Fair, for return to the College, and to make such expenditures for the safe return of all valuables as may be necessary, at an expense not to exceed \$300.

The Committee on Finance audited the various accounts for the quarter ending September 30th, and the Board adjourned to meet on Tuesday, January 23d, 1894, at 3:30 p. m.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith.
Ionian Society.—President, Mary E. Lyman; Vice-President, Marlam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavenagh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembly; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Oct. 7, 1893.

The Webster Society was called to order at 7:30 p. m., by President Ames. Roll-call showed a large attendance. Mr. Eggleston led in devotion. After the reading of the minutes the Society listened to a very interesting debate led by C. Cole on the affirmative and C. R. Pearson on the negative. The seconds were respectively, C. D. McCauley and H. G. Pope. The question was: "Resolved that the United States Government has more to fear from within her borders than from without." Some of the points discuss-

ed were: The dangers that threaten our borders with in; the danger of our political schemes; the race wars, and several other strong points. The Society decided in favor of the affirmative. The next on the programme was an essay by Mr. Eggleston, entitled, "The Summer Girl." It was a very instructive and interesting essay for the boys. So much so, it was moved and seconded that we have some extemporaneous speaking on the same subject. It was heartily participated in and enjoyed by all. The stringed orchestra furnished some very fine music, after which Mr. Robison gave a good speech on "Trap Hunting" showing that he has had experience in that line. Mr. Hayes was then called on to describe the recent wreck which took place near Keats. He did so, and in a way for those who did not see it to be just as well satisfied as those who did. Under the head of new business W. H. Steuart was elected an honorary member of the Webster society. The orders of the day were then called for, which are adjournment, at 10:30.

W. A. C.

October 6th.

Society called to order by the President immediately after Chapel exercises. Opened with congregational singing. Miss Turner led in devotion. Roll-call. Miss Harriet Vandivert elected and initiated. The program was opened by Miss Pincomb with a declamation, entitled "Fidelity unto Death," which related a true instance. Hotensia Harmon read an interesting essay in her usual pleasing manner, entitled "When the Frost is on the Pumpkin." Which was an amusing account of how three girls harvested a crop of pumpkins. The Oracle was presented by Laura McKeen, with the motto, "Equal rights to all and special privileges to none." This number contained many interesting articles. Miss Mollie Grout favored the Society with a vocal solo "Calvary," Miss Helder at the piano. Miss Corbett concluded her reading begun a week ago. Debate was the next in order, the question being, "Resolved that the politeness of the American women varies indirectly with their freedom." Miss Ellen Norton opened the debate. Lillian Oldham spoke first for the negative side. The second on the affirmative, Miss Louise Spohr being absent, Blanche Hays read her argument. Miss Staley further argued the negative. Miss Norton closed the affirmative, while Miss Oldham had no further remarks to make on her side. The judges, Misses Turner, Pape, and Patten, decided two to one in favor of the negative. The usual routine of business was transacted next in order. Reading of minutes. Adjournment.

I. R. F.

October 7th.

The Hamiltons were called to order by Pres. W. O. Staver. Roll-call showed the intense interest taken in the Society. Prayer R. K. Farrar. The new members joined with us were J. R. Whitson, J. H. Hoage, F. L. Smith and Frank W. McQuaid. The program of the evening was opened by Mr. Marty with a declamation which was well committed and delivered. E. O. Farrar did credit to himself in reading an explanatory essay. C. F. Doane exhibited his Hamilton training in delivering a declamation. Debate,—"Does the benefit derived, by the people of Kansas, from the Experiment Station at this place justify the expense of running it." The affirmative was argued by C. R. Hutchings and A. L. Peter, who stated that the cost of the experiment station is \$15,000 a year. Mr. Hutchings explained that Veterinary Science, Chemistry, and Horticulture are intimately connected with Agriculture, and claimed that while the farmers are not receiving cash in hand from the experiments at present, they will reap a rich reward in the future by following out the teachings of the bulletins. He drew illustration of the large increase that certain farmers have appreciated by following the experiments tested at this station, both in crops and feeding. 7,000 bulletins were sent out annually until the 33rd number when they sent out 7,500. Kansas farmers receiving about 5,000 of them. Mr. Peter brought a specimen of the bulletins before the Society and explained the simple manner in which it was arranged. Claims that theory comes before practice. That while the bulletins tell what kind of seed to plant and where to plant them to receive the most, it also give tables for applying fertilizers in the proper proportion. Mr. Peter thinks the bulletin a very fortunate means by which Prof. Georgeson can gradually send throughout the country his unlimited store of wisdom. The negative is argued by J. A. Sheel and H. G. Johnston, who claim that while the theoretical part is very good, the practical application of the experiments is lacking. They state that the bulletins are not received by many farmers and many who do receive them can not understand them. Mr. Sheel states that the fertilizers are good for eastern countries but Kansas soil is good enough without any fertilizers. He claims that Prof. Georgeson gets his knowledge of agriculture from the farmers and it is useless to have this printed and sent back to them. That farmers are not capable of applying the balanced ration, i. e., proper portions of nitrogenous and carbonaceous food. He read some of the tables and showed the impossibility of applying the methods. Speaks of the difference in climate, soil, sub-soil, etc., in the different parts of the state vary so much that experiments tried here will not prove the same in other places. Mr. Johnston speaks of the unfavorable location of the experiment station, of the seasons being different each year the experiments will not apply the next year. Judges, E. O. Farrar, W. Bryan, and C. E. Jones, decided two to one in favor of the affirmative. After recess we were entertained with music, committee G. Doll. Long and interesting discussion on "Wild Bill," by J. W. Holland. Mr. Holland takes us all over the west and for a while had a full set of pompadours before him then we were led back. News of the week was presented by W. I. Joss. He gave all the news from the Gulf of Mexico to Northern Europe. Unfinished business. New business. Adjournment.

F. Y.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Dickinson county high school has 186 students enrolled.

Bethel college, Newton, has enrolled seventy-five students.

Midland College at Atchison has a library of about 5000 volumes.

Sixty-four students were enrolled at the Eureka Academy Tuesday morning.

The young women's classes in gymnastics at the State University have seventy-nine members.

Kansas City, Kan., has 5,679 pupils enrolled in the public schools, with seating capacity for only 5,592.

The Riley county teachers will hold their first winter institute at Riley. The County teachers' examination will also be held there on October 28th.

There are eight school buildings in Emporia, four of them being presided over by ladies and four by gentlemen. Emporia believes in equal rights.—*Republican*.

Kansas State University has received an Aztec idol for the museum. It comes from Mexico through Gov. T. T. Crittenden, Consul General from the United States.

Salina College will issue a paper. A company has been formed with the following officers: J. W. Wetzel, President; E. D. Smith, Vice President; W. O. Gosset, Secretary; and J. A. Whitted, Treasurer.

The Faculty of the State University are making arrangements to deliver a course of university extension lectures in Leavenworth this winter. The first lecture will be given in October by Prof. L. I. Blake.

The Kansas State University foot ball team has accepted the challenge of the Minnesota State University team to play at Minneapolis, Saturday, October 14. The Kansas boys claim to be in excellent condition.

State Superintendent Gaines, and his assistant, W. S. Struble, have bought the *Monitor* and the *Herald*, two weekly papers published at Abilene. The papers will be consolidated and published under the name *Monitor-Herald*.

Commander Barnard Kelly has appointed O. C. Hill and Judge John Guthrie as two of the members of a committee of three, who shall examine the kind of reading, in the readers used in the Kansas schools. They want the rebels called by that name.

Several of the Salina Wesleyan "boys" wanted to have a good time one night last week, so they made a moonlight call upon a melon field and succeeded in spoiling quite a number of melons, when the owner appeared and, as a result, the farmer is the richer by \$4.50.

The commissioners of Greenwood county, after careful thought on the question of the county high school, have decided not to call the election this fall. They believe it will be better to wait a year until the times are better, before submitting the proposition.

The State Library has thirty-two thousand volumes of which about twenty thousand volumes are law books. The State Historical Society has fourteen thousand bound volumes and sixty thousand unbound. With this assortment of material at one's disposal, investigation would seem almost boundless.

The county meeting of the Butler County Teachers' Association and Reading Circle will be held on the third Saturday of September, January and April, each meeting to be held at ten o'clock A. M. The district meetings will be held on the first Saturday of each month from October, 1893, to May, 1894, inclusive, beginning at 1 o'clock P. M.

The papers announce the marriage of Pres. John M. Bloss, of the Oregon Agricultural College, and Miss Mary Woods of Topeka. Prof. Bloss served five years as superintendent of the Topeka schools and Miss Woods was formerly the principal of the Clay schools at the same place. Both are well remembered by the Teachers of Kansas.

Value of Nitrogen.

A few words in regard to nitrogen in fertilizers will not be out of place. This is the most costly constituent of commercial fertilizers; and in many instances the increased cost of the fertilizer will balance or even exceed the increase in the proceeds from the crop, due to the nitrogen. Fortunately we do not have to rely entirely upon commercial fertilizers for our supply of nitrogen to enrich our soils. Recent investigations have proved that the class of plants called "leguminous plants," to which the clovers, peas, beans, etc., belong, have the power of deriving from the air a part of the nitrogen required in their growth. For this reason they are sometimes called "nitrogen gatherers." This fact helps to explain why clover is so valuable in restoring and enriching poor soils. If we fertilize our crop of clover liberally with potash and moderately with phosphates, we have there the means of enriching our soil in all these "essential ingredients" of fertilizers. This is a very important principle in the use of fertilizers, and is in accordance with long established practice.

—*Colman's Rural World*.

Disadvantages of Government Service.

The Secretary of Agriculture happened to have brought into his office, while we were talking, a fine group picture of his four grown-up boys and himself. These are all getting along well in business and he began telling me of the many disadvantages resulting from a life in the government service here. He spoke of instances where his efforts had been enlisted to secure places in some one of the departments for sons of friends of his. These are enterprising fellows and he could not understand why they should desire to bury themselves in the government service. The salary is just enough to take away one's ambition, and no matter how much the new appointee may be determined to leave his place and go into private business and make his mark in the world he rarely does it, because his courage as well as his originality are gradually sapped away from him in the dry routine of desks, papers and red tape. It is all very well to spend a brief period in the government service if it is looked upon solely as a beneficial experience to be made use of later, but it hardly ever happens that the period of service is so looked upon. The man works on and on, his ambition goes, and we find him at the age of fifty or sixty still toiling away over his desk. The same natural talents and courage applied in the outside business world would have brought him, at least, local fame and fortune.—*Correspondent of the Live-stock Indicator*.

MANHATTAN ADVERTISEMENTS.

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R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

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WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday (noon train), returned each Friday in time for social and society meetings. Express office will be open Monday, Friday, and Saturday until 8:30 P. M. D. W. March, Agt.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

ECONOMIC MILITARY POLICY.

BY PROF. E. B. BOLTON,
[Captain 23rd Infantry, U. S. A.]

IT is the duty of every Government to protect its people from imposition by invasion, insurrection, or disturbance of the peace. In time of war, all Governments need trained, efficient soldiers, and generally need them very badly; it is their duty, then, in times of peace, to make proper provision looking to a probable adequate supply for future need.

Until recently this question has not impressed itself very forcibly upon our people since the late Rebellion, because the feeling of security reposed in the efficiency of the Veterans of that war has obviated the necessity; but now a quarter of a century after its close, and the ranks of that unconquerable host of noble patriots having become thinly decimated through the visitations of death, the decrepid bodies of many of their survivors remind us of the necessity of making other provision for new men to supply their places. They were trained in the rugged ordeal of real war. Their successors must be trained in some other way. The important question for consideration is, What other measure is least expensive and consistent with best efficiency? The Europeans maintain a comparatively large standing army, at very great expense, in time of peace, purposely to train their young men in the customs and duties of soldiery so as to have them ready for war. Reliable military authorities tell us that the actual number of soldiers enrolled in all the armies of Europe combined, on a peace-footing, have increased from 2,000,000 men in 1870, to 3,500,000 in 1893; and that the annual war expenditures have increased from \$600,000,000 to \$1,000,000,000 in the same period. Also, that the fear of war has been so constantly transcendent in the minds of the people that the maximum number 7,000,000 of men, which was required for a war footing in 1870, has now, in 1893, increased to 23,000,000 trained soldiers. In order to maintain twenty-three millions of men available for duty, while only three and a half millions are actually on duty, all of the eligible young men who become of military age that year are required to enter the military army and serve with the colors from three to five years, and not allowed to go into business for themselves as the English speaking race are accustomed to do. After three to five years they have become thoroughly trained, and then go into the reserves from five to seven years, being allowed to engage in civil pursuits, but required to devote several weeks each year to encampments, army maneuvers, etc. They then pass into the extra reserves from two to five years, when they have more time to devote to private business. At expiration of this term they are honorably discharged, pass into civil life, and are absolved from all further military obligations. Thus, by enrolling a new contingent every year; putting them through a systematic course of training for a few years, then holding them in the active reserve for a greater or less term of years, any desired number of soldiers may be eventually obtained. This method insures a large number of highly trained, well-disciplined soldiers who are ready to go into battle, if need be, without further ado than to be transported to the scene of action. It is exceedingly expensive, however, both in money and the withdrawal of young men from the shops and other avocations. This annual contingent numbers over 1,000,000 able-bodied, healthy young men on the threshold of life, and whose business interests are made secondary to their patriotism.

The close proximity of many of the European governments to each other, and their innumerable conflicting interests which such proximity is calculated to engender, compels the governments to keep a larger active army in each nation than the ordinary demands for so many men would entail; and for that reason the measures described above were adopted. Not so, however, with our own government; its geographical isolation from close contiguity with other governments of military importance relieves it from the necessity of maintaining a larger army than its customary demands, merely for the purpose of turning out a large annual contingent of trained soldiers, provided some means can be devised by which its young men could obtain a knowledge of military drill and the art of war without having to serve from three to five years in the army for it. The plan now on trial is an adoption of the U. S. Congress, and consists simply in teaching College boys military drill and the rudiments of the art of war along

with their college course, and leaving them free to engage in business as soon as they leave college. Believing that military training thus acquired in the college course of four years will do as well for us in our peculiar circumstances as the several years' service in the young man of European governments, the government is experimenting by authorizing the detail, when applied for, of as many as seventy-five army officers at colleges having military departments, and by furnishing all arms, equipments, and ammunition necessary for military instruction.

So very popular has this method proven to be, that the number of officers authorized by law for such details has increased from twenty in 1868, to seventy-five in 1890, and the Chairman of the Congressional Committee on Military Affairs has recently reported a bill, with favorable recommendations, to extend the number to one hundred.

The cost of this method, as compared with that of the European, is so insignificantly small that it may be regarded as distinctly the American economic policy, since its scope contemplates reaching out in time and bringing all young college men under its jurisdiction; and if the average cost of each officer be estimated at an expense to the Government of \$2000 per year, the one hundred military instructors would cost the Government \$200,000 per year, and five hundred instructors would cost \$1,000,000.

If we could in this manner arouse a military sentiment and become an enthusiastically military people without actually maintaining armies to engender the spirit, it would pay us to teach military tactics in every country school. The National Guard of each State would then flourish like a green bay tree, and be in its maximum delight and glory.

An army of half a million of men, such as France or Germany are accustomed to maintain, costs not less than two hundred millions of dollars each year; which is as much as our pension roll and standing army of twenty-five thousand men together now require. The annual appropriation for pensions is not more than the cost of supporting an army, such as this Government should have, had it not depended on the old veteran instead of a standing army ever since the war.

It is evident, then, that the policy of training the school-boy, as proposed by Congress, is much the less expensive, provided the experiment proves to be as efficacious as that of standing armies. This part of the policy remains to be tested; but it is believed that with our geographical isolation the measure will prove a success, and the War Department is watching with great interest its workings, touching up here, encouraging there, and lending its valuable aid towards a fair and honest trial. Should the policy fail, however, to stand the crucial test, the cost of a standing army would have been insignificant as compared to the National calamity which would follow.

The importance, then, of the great responsibility which colleges assume when they attempt to govern, guide, and direct the training of young soldiers on whom the Government is dependent for its very life, is a serious one.

EGG BASKETS.

BY PROF. HOWARD MURRAY JONES.

THERE is an old legend which runs thus: "Once upon a time a good old couple lived in a little valley, among the mountains. The old dame took care of her house and her flock of hens, while her husband tended his flock of goats. The hens were industrious; the old housewife soon had a fine lot of eggs for market. Heaping them all into a frail basket, she was starting for town, when her husband said, 'You had better put those eggs into two baskets: that one is loaded so, that it will break and you will lose your eggs.' After the manner of some wives, she remarked, 'I know my own business,' and so started off. When she had reached the top of a steep, stony hill, just outside of the village, the bottom dropped out of her basket."

We may be tempted to smile at the old dame, but are not many of our "level-headed" men doing the very same thing today—risking too much on a single venture—or in other words, putting all their eggs in a single basket? Whenever we take up a paper, we notice that some manufacturer has devoted himself too exclusively to some one line which has been overdone, hence his plant goes into the hands of a receiver, even though his warehouses are filled with costly stock. In merchandise we see the same thing—a large stock "slaughtered" because "too large," or

consisting, perhaps, of a single class of goods, that class at the time being unfashionable or otherwise depressed. The merchant should have a larger assortment of baskets for his eggs.

One of the most beneficial lessons to be drawn from the past year of industrial depression and financial ruin to so many Americans will be this warning: Don't risk all on a single venture. This past summer many a man has at night gone to bed wealthy, and got up poor in the morning, simply because his whole fortune was deposited in a single bank. He now knows how to sympathize with the old woman who went home with nothing but a bottomless basket and a great deal of experience.

But experience, that dear school, is the only one in which some people will learn. It has always been so. There was once a French Queen who wore a peculiar ornamental comb. The ladies of the court at once adopted it. That comb immediately became fashionable throughout the realm. There sprung up a class of comb-makers and dealers, the business became a flourishing industry; but alas! The Queen laid aside her comb. What was then true of the comb-maker's trade is now doubly true of all trades. A man may spend years in learning his trade; in fact, he may work at it too long to ever learn another, and then some inventive Yankee will come along with a machine which will take the bread out of the artisan's mouth. Happy is that a mechanic if he has two egg-baskets! The shoe-makers were also a thrifty class, but now they are insignificant; we have boot and shoe factories, and now and then an indifferent cobbler.

These days we hear so much about specialism that we might infer that it was damaging for a man to know how to do more than a part of one thing. But already some of our most sagacious men have come to see that this cry of specialism has been too loud, and that many people are suffering in consequence. The current is beginning to turn the other way. In our cities the great "general store," where anything from a hair pin to a steam engine can be purchased, is coming more and more into favor. Merchant and customers are alike waking up to its superiority over the old method where a different store had to be visited for each class of articles purchased. If you will take the trouble to investigate, you will find that the discreet business man is becoming interested, more and more, in a variety of enterprises—bonds, various stocks, real estate in localities widely separated, to say nothing of the great number of miscellaneous projects for investment.

Not long since this question was put to a successful Chicago physician, "What is your specialty, Doctor?" "My specialty," he replied, "is general practice, and a very good specialty it is, too, these days, I can tell you." The writer knows a thrifty German lad who has deposited \$200 in the banks, yes the banks, ten of them; for he is afraid to risk more than \$20 in any single bank. In these panicky times even, it is safe to predict that Johan Steiner will always have a few eggs left.

But not to multiply examples, has this discussion any message for the student or the farmer? If in acquiring a specialty, a student has become short-sighted and narrow, he has paid too much for it. The man who cannot look out of the window of his own workshop upon the broad fields of a "liberal education," with its consequent "general culture," has patronized too extensively a single basket.

May not the farmer find some relief for his present depression by avoiding the evils of specialism? The inquiry may be trite, indeed, but how many are acting on the suggestion? When the wheat grower of the Dakotas has had a good season, wheat is so plenty as to be practically worthless; in a bad season he has none to sell. Do the corn growers farther south fare much better? The man who raises nothing but hogs has a hard time when pork is "cheap" or an epidemic is raging among swine. The introduction of the electric street car, five or six years ago, killed the business of raising that class of horses which were designed for the street car service. Some of the horse raisers have not yet worked off their depreciated stock.

The Westerner believes so devoutly in the great possibilities of the great West that he cannot bring himself to embark in some seemingly small enterprise. He rejoices in laying out town sites or negotiating for a railroad. He would be ashamed, when he went to town, to take along a bag of beans for sale, as his Yankee brother does. In fact, many a Westerner boasts that he wastes more than a Yankee raises. Nevertheless the dollars a Yankee gets together (no one but a Yankee knows how) are not to be despised. It is the opinion of the writer, after having traveled from ocean to ocean, that in general the Eastern farmer is better off than his Western brother.

This may be partially accounted for by the nearer market, but to offset this the Easterner has a poorer soil to begin with, and it has become impoverished by long use. Moreover, he has to stable and feed his stock five or six months out of the twelve. Yet the Easterner has better stock, buildings, and more home comforts. Why is this? For one thing, he makes a little profit from a large number of sources, seemingly too trivial to be considered worth while. For example, there is a farmer in Lake County, Ohio, who pays his yearly taxes on 100 acres of land with the proceeds from a small grove of nut-bearing trees, the boys and squirrels getting the lion's share, at that. The small general farmer farther east has a little to sell from each of a large number of crops. So, however bad the seasons or the markets, he has a tolerably steady annual income. His few eggs are well distributed.

Perhaps there is no more barren agricultural country than Scotland, yet the Scotch are known the world over for their thrift. Their philosophy of prosperity is summed up in the proverb, "Many a mickle makes a muckle." When we of the West learn the danger of embarking in a single grand project whose miscarriage means ruin, when we learn that "the day of small things is not to be despised," we shall build our fortunes, more slowly, perhaps, but certainly more surely.

The Persistent Man.

Money and brains, a rare combination, often fail to unlock the door of success. Money can buy the goods which the brains selected, but it takes something more than either to build up a business and gain a reliable foothold in the world. Often the most brilliant minds are anchored to an impatient disposition which cannot brook delay or await development. The bright intellect may involve a good scheme to increase trade, but if the body is unwilling to bestow the tedious labor necessary to carry out the project, nothing is accomplished. Ten men out of a dozen can readily and clearly define what course to pursue to achieve success, but hardly one will have the persistence to faithfully take up in turn the various details which are essential to the result.

The streets of New York and Chicago are lined with smart men who have intellects above the average, and are well posted in matters of general interest. Many of them have at some time handled round sums of money, and been in business with flattering prospects. They have lived to see what they style "slow men" pass them on the road to wealth, and this in spite of their bright ideas and once ready cash. The simple reason why so few men succeed in business is not because they are not brilliant, but because they are not patient for results. Building up a business may be likened to a brick wall. Each individual brick must be carefully and faithfully placed, and not until this operation has been repeated thousands of times will the wall commence to assume importance. It does not take any extraordinary amount of brains to plan out in a single hour sufficient business plans to consume a year's exertion, but it requires a high degree of persistence to follow out the details six days in the week, and fifty-two weeks in the year.

The opportunities which we often hear about are at our feet, and not over our neighbor's fence, as too many imagine. We know a successful business man, past middle age, who has worked his way up from small beginnings. Speaking of his life, he remarked that the greatest enemy he had to conquer was a natural disposition to try a new field of labor. There had not been a year since he started business but he had been tempted to experiment in some other line of trade which promised more profits. That he had not yielded to this inherent feeling he attributed his success. For, as he stated, only two of all the young men who were his competitors at the start were now independent, although they had in the meantime tried a dozen occupations.

There is only one road to success, and that is a bee-line from where you stand. Steer straight, and you will reach the goal. It takes more persistence to-day than it did twenty years ago, for avenues of trade are more closely populated. It was possible once for a bright man to make a fortune out of a single idea with comparatively little personal effort, but there is to-day a surplus of schemes, and too few persistent workers. Every merchant knows a score of "short cuts" in trade, but it is only occasionally that we find one who has the application to patiently work out his ideas. —Business.

Ragged Roadsides.

Few things give a country landscape a more disagreeable and slovenly appearance than ragged roadsides. By this we mean roadsides overgrown with weeds, littered with brush, or in fact in any other condition than well sodded with grass. Inquiries that come to us occasionally would indicate that many farmers think they have no lot or part in the roadside. As a matter of fact, they do not so belong. With the exception of the right of way, and the right to use timber and stone for the repair of the road, the farmer has as exclusive right to the road and all that grows on it as he does to his enclosed farm.

It is a comparatively easy matter to have a roadside well set in grasses and to use them as meadows

in all sections where stock are restrained by law. Where they are not restrained, they usually perform the good service of keeping down the weeds and encouraging the growth of grass, if they do sometimes break through poor fences and destroy crops, frequently at this season destroying themselves as well. There is an easy and cheap way of utilizing the roadsides, viz., sowing them down to grass, and then mowing them, where stock is restrained. In any tame grass country, this will result in speedily securing a sod that can be used for a meadow. In much of the western country, clover and timothy, which are sown at first, will give way to blue grass, but by sowing early in the spring, and then given a half seeding the next spring, mowing for meadow and taking a seed crop, or cutting a second crop for meadow after the seed is ripe, it is possible to keep the roadsides an almost continuous clover meadow. This will make the roads a source of profit, and instead of a source of unsightliness add quite considerably in the way of looks to the value of the farm and the value of the lands in the entire neighborhood. —Live Stock Indicator.

Farmers' Vacations.

Business men who give closest attention to their affairs during the fall, winter, and spring are finding it necessary to their health, vigor, and efficiency for business, and to the preservation of life, to take a few weeks of vacation each year. They naturally take it at the time when business is duldest, which are the months in which the farmer is busiest. When the farmer is busy in June and July with his crops, business is always dull in towns and cities.

There is no reason why the farmer should not take a vacation at his slack time. His labors, while not as exacting in some respects as those of the active business man, are more exacting in others. They are very monotonous, and require close attention early and late every week day and more or less attention every Sabbath. There is no reason why the farmer should not take a vacation at the season of the year when his business can best afford it, and still less reason why the farmers' wife should not. After confinement for eleven months or more in a year it is necessary, even to his efficiency as a first-class farmer, that he should get off his farm for a week or two and see other farms and farmers, and how people of other trades and professions and lines of business live. The fact is that monotony is killing to any one when continued too long. Especially is this true of farmers' wives. The life of a farmer's wife is a perpetual round of small details, often not merely exacting, but laborious, and taxing severely her physical strength and endurance. Under these circumstances it is hard to look on the bright side of life sufficiently to do even one's best work. A visit to the State or county fairs, the Columbian Exposition, friends at a distance, old neighbors, or anywhere that will break the monotony and obtain a view of another phase of life, cannot help but be worth more than all the money it costs. —Live Stock Indicator.

What Irrigation Means.

Irrigation means new and better economic conditions. It means small farms, orchards, and vineyards, more homes and families, with moderate means and greater comfort. It means more intelligence and knowledge applied to farming; more profit from crops, more freight and commerce, because special products of higher grade and better market value will be raised. It means association in town life instead of isolated farms; it means the occupation of small ranches of every mountain basin and valley, and the gradual but still rapid filling up of foot-hills and table-lands. It means telephones and telegraphs, good roads and swift motors, fruit and garden growth everywhere; schools in close proximity, villages on every hand, and such general prosperity as can hardly be dreamed of by any one individual. To achieve it more readily, intellectual understanding, business direction, and scientific organization should be given to the great movement now coming to the front for the development of enterprise and progress. —Richard J. Hinton, in the Arena.

Beautify the Farm.

Very few "practical" men of any calling realize how much money value there is in the beauty of a place, but the fact that there is money value is recognized by "practical" city real estate men who understand fully that they must beautify their "additions" and render them attractive in order to sell lots, and it is really true that it pays in money to make a farm, and especially a farm house and buildings, neat and attractive. Costly buildings are not necessary. Indeed, small, neat and cosy buildings are more attractive than those which are too conspicuous. A neat lawn, a well kept garden, thrifty shade trees, and small, neat buildings, well painted and cared for, and in keeping with the surroundings, attract the eye. And the influence of one man or woman of taste has a force which often leavens a whole neighborhood. One neat and tasteful farm is never the only one in a neighborhood for many years. Others follow, and as the good work goes on prices invariably advance, because those who own the property do not care to sell and those who see it are attracted and wish to buy. —Home, Field, and Forum.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Misses Flora and Daisy Day spend a week at the World's Fair in company with their father.

Janitor McCreary finds a new bicycle a great aid in solving the question of rapid transit between his home and his business.

Mrs. Fritz, of Newton, was a visitor at the College, Friday afternoon, accompanied by her daughter, Mrs. Thompson.

Prof. Georgeson started on Tuesday for Chicago to attend the meeting of the Association of Agricultural Colleges and Experiment Stations.

The Committee on Farmers' Institutes has under consideration the programme for the Short Course in Agriculture which begins the second week in February.

Applications for college assistance in farmers' institutes are coming in already, and it is to be hoped that all who desire such assistance will communicate with the President at an early date.

In the absence, this week, of both the Managing Editor and the Superintendent of Printing, the work of getting out the present copy of the INDUSTRIALIST devolves, pretty largely, upon the "boys" in the office.

New students keep dropping in, and inquiries are frequently received in regard to the College. One young inquirer recently stated that he desired to attend a "steam engineering school," and thought this might be the place.

Dr. Earp, of El Dorado, gave the fourth of the series of lectures on economic subjects. His theme was "The Nature of Wealth and its Relation to Human Welfare." The subject was handled in a comprehensive and impartial manner, and yet was so popularized as to hold the interested attention of the audience which greeted him.

"I had no idea that Kansas could boast of such a practical way of helping the farmers," says a farmer in writing for copies of the Experiment Station bulletins. He continues: "Your bulletin No. 40 fell in my hands the other day and proved so interesting and on such a timely topic that I cannot rest until I have all your publications in my library." Such words from a practical farmer are appreciated.

Prof. Hitchcock occupied the public hour on Friday with "A Personal Reminiscence," being a description of a journey once taken by the Professor to the West Indies on a botanical collecting tour. The start from the Florida coast, the life on board the sailing vessel, how to sail a vessel, how to "take the sun," seasickness and various incidents of the journey were carefully described and attentively listened to. The climax was reached in the midst of an exciting incident in which some sailors were described as taking a sea bath in those shark-infested waters. The narrative had reached the point at which the sailor farthest away from the vessel had uttered a scream of agony, when the speaker suddenly called "time" on himself and left his audience in doubt as to whether the sailor had been taken by a shark or with the cramps.

GRADUATES AND FORMER STUDENTS.

C. A. Kimball, '93, was seen among the Friday visitors.

Maude Knickerbocker, '93, is teaching school in Nevada, Iowa.

Alta Lee, Second-year in 1891-2, visited at the College Friday.

R. S. Reed, '92, superintends the Cedar Point schools this year.

F. Farley and R. S. Kellogg started yesterday for a week at the World's Fair.

J. E. Taylor re-enters the Fourth-year class after a year's work at Chicago and at home.

A. A. Gist, '91, visited classes Monday morning. He will leave this week for the World's Fair.

B. M. Brown, Second-year in 1892-3, spent Friday and Saturday visiting friends at the College.

Myrtle Romick, Second-year in 1892-3, who has just returned from a prolonged visit in California, was at the College Friday.

W. T. Allen, Third-year in 1892-3, now employed in the railway depot at Topeka, was at home over Sunday.

A. C. Mitchell, Second-year in 1887-8, is now cashier for the Atchison, Topeka, and Santa Fe at Florence, Kansas.

E. C. Abbott, '93, stopped over to shake hands on Tuesday last. Mr. Abbott is just returning from the

World's Fair and will at once take up his law studies under his father's direction at Garden City.

G. G. McConnell, Third-year in '83, has just returned from the "Strip," where he secured a fine claim without a contestant.

Andrew Jackson, Second-year in 1891-2, writes that Geo. W. Wildin and himself are both members of the Columbian Guard at the World's Fair. Mr. Jackson expects soon to go to California.

Professors F. A. Waugh and W. W. Hutto, both of the class of '91, are frequent contributors to the "only agricultural paper in Oklahoma or the Indian Territory" the *Home, Field and Forum* of Guthrie. Prof. Waugh is also editor of the press bulletin now issued by the Oklahoma Experiment Station.

Standing Committees:

President Fairchild has announced the standing committees of the Faculty for the present year as follows:—

Farmers' Institutes—Professors Failyer, Popenoe, Walters, Graham, Georgeson.

Post-graduate Courses—Professors Popenoe, Failyer, Hood, Georgeson, Hitchcock, Walters.

Library—Professors Lantz, Failyer, Popenoe, Olin, Georgeson, Nichols.

Industrialist—Professors Walters, Failyer, Thompson, Georgeson, Mason.

Examinations and Grades—Secretary Graham, Professors Lantz, Olin, White, Harper, Rupp.

Public Exercises—Professors Olin, Kedzie, Brown, White, Bolton, Jones.

Social and Literary Entertainments—Professors Kedzie, Winchip, Brown, Hood, Nichols, Harper.

Buildings—Professors Hood, Walters, Mayo, Willard, Mason.

Catalogue, Blanks, etc.—Professors White, Lantz, Graham, Thompson, Willard.

Athletics—Professors Georgeson, Failyer, Winchip, Bolton, Mayo.

Museum—Professors Mayo, Failyer, Popenoe, Graham, Hitchcock.

Notes from the Horticultural Department.

Among a small lot of new varieties of tomatoes tested this year at the Station, "Trucker's Favorite" and "Nichol's No. 5" deserve special mention. Both are of the "purple red" sort, and both run very smooth during the entire season. "Nichol's No. 5" is the earlier of the two, but "Trucker's Favorite" is the larger, more even, and an immense cropper. It bore heavily till frost, and the vines were then full of green fruit. Both are certainly most desirable tomatoes. Seed of the former was sent to the Station by the originator, A. M. Nichol, Granville, O.; that of the latter by W. Atlee Burpee, of Philadelphia.

A new bed of strawberries has just been set comprising ten of the leading varieties, Warfield, Martha, Haverland, Bubach, Manchester, Ohio, Capt. Jack, Chas. Downing, Gandy, and Shuster's,—in all 3600 plants,—the object being to try them in marketable quantities and to test the effect of various fertilizers on the growth of the plant and on the texture and flavor of the fruit. To accomplish this latter, the bed is laid off into nine blocks running crosswise. Bone meal was applied to two, commercial fertilizer to two, and barn-yard manure to one; these five alternating with four blocks without fertilizers.

One of the most attractive things on the grounds at present is the small bush of Black Alder, *Ilex verticillata*, at the fork of the drive. Its bright red berries produce a very pretty effect against the background of darker shrubs and pines.

By a little forethought in selecting varieties and a like care in bagging the fruit, farmers might have grapes on their tables until late in the fall. Some of the later varieties, as Mills, Brant, Catawba, Lindley, Woodruff's Red, etc., if sacked to protect them from the frost, will keep until the middle of October or even later. At this date, Oct. 20th, bunches of some of the above varieties which were sacked early in the season are in prime condition. The sacking is a very simple operation. Common grocery sacks of the small sizes, just large enough to hold a bunch, are used. With a pair of scissors slit the top of the sack down two and one half inches; slip the sack over the bunch and fold the top around the cane, keeping in place with a common pin. With a little practice, this may be done very rapidly, and serves to protect the fruit not only from frost in the fall, but from birds and insects earlier in the season. The bagging should be done about the time the grapes are full size, say August 1st.

F. C. SEARS.

As invariable a part of each day's household duties as the washing of the dishes, should be the regular and systematic burning of all unsavory bits, animal or vegetable. If the air about each individual's domicile were thus kept clean and pure, public precautions against pests would not be so essential, and their lack not so fear-inspiring. A covered pan should be provided, into which may be put at once all scraps, refuse of fish, fowl, game, cabbage leaves, parings of carrots, turnips, potatoes, tea leaves, coffee grounds, bits of stalks, pea pods, and the like. There they should remain covered until the dinner is served. Then, while the kitchen fire is still hot, they should be placed on the coals, covered with a few fresh coals or cinders, and the stove lids replaced. Later, a raking down and fresh coal will cause the fire to burn up brightly and meantime all the disease-breeding scraps will have been reduced to harmless ashes. —*New York World.*

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith.
Ionian Society.—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Seccrest; Critic, Jennie Smith; Marshal, M. A. Limbucker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

October 13th.

Promptly after chapel, President Lyman called the Society to order, and after congregational singing, led in prayer. Roll-call. Misses Doll, Wilkins, and Yenawine were elected and initiated. The program was opened by Mary Norton with a declamation, followed by an original story, by Mary Lyman. Lorena Helder favored the Society with a vocal solo. The Oracle was read by Belle Frisbie. Minnie Spohr then recited the poem entitled "The Organ Builder." The topic which had been assigned for extemporaneous speaking was: "What would be the benefit, if any, to the student speakers if the lectures in chapel were committed to memory, and delivered, instead of read." Misses Turner and Harmon spoke. Misses Stingley and Hutchings were also called upon for their views upon the subject. This closed the program. The usual order of business was gone through with, and after roll-call with quotations, Society adjourned.

I. R. F.

October 14th.

President Ames called the Webster Society to order at 7:30, by a sharp rap of the gavel. The continual increase in the roll shows for itself what the Webster Society is doing. Mr. Evans led the Society in prayer. After the reading of the minutes, Messrs R. B. Hull, M. B. Williams, and F. L. Richardson were duly elected members of the Society. The program for the evening followed. Debate, "Resolved, that the World's Fair should be open to the public another year." It was argued on the affirmative by I. A. Robertson and C. Cole, and on the negative by W. T. Taylor and W. A. Cavanaugh. The points brought forth on both sides showed considerable preparation, but unfortunately for the affirmative, they forgot they had opponents, and argued against themselves, in consequence of which the Society decided in favor of the negative. Mr. Dorman gave a declamation entitled, "Farmer Jones' Pledge." It was well committed and delivered in regular Webster style. Mr. T. M. Robertson's essay on "A Trip on Lake Michigan," was good and well read. Mr. Cutler gave us a solo, with guitar accompaniment, entitled, "After the Play." He received a very hearty encore but did not respond, much to the sorrow of the Society. Mr. Meyer's essay on "Farm Fences" was excellent, showing the danger to animals, etc. Vol. 24, No. 3 of the Reporter, edited by F. J. Smith was "out of sight," as the saying is. It had all good articles and a great many locals which pleased the Society very much. Mr. Dolby gave a very good discussion, after which the Society adjourned at 10:30 p. m.

W. A. C.

October 13th.

The Alpha Beta Society was called to order shortly after Chapel, Pres. G. L. Christensen in the chair. Mr. and Miss Fryhofer opened the program with a violin and organ duet. Prayer was offered by D. L. Timbers. Stella Kimball, acting as Marshal, in the absence of M. A. Limbucker, administered the oath of membership to Messrs. Clothier and Hughes and Miss Philbrook. Select reading by O. H. Halstead, descriptive of "The Lightning-rod Man," was followed by a select reading by Elsie Waters, describing that most disagreeable of tasks, "Putting up a Stove." The question, "Resolved, that the present election law of Kansas should be abolished," was argued on the affirmative by J. F. Odle. W. H. Phipps and Mary Painter supported the negative. The affirmative argued that the State, under the new law, will have to print tickets for the whole State, and erect booths at each polling place in the State, which, alone, will cost not less than five thousand, five hundred dollars, thus incurring a large expense, which under the system in force, formerly, would be avoided; that the enacting of this law implied that our elections were dishonestly held, when to the contrary, they are the most honorable; that as all former stipulations concerning electioneering at the polls have been disregarded, we certainly cannot expect that this new law will be better obeyed. The negative claimed that, taking as a basis the figures given by the affirmative, the expense would not exceed sixteen cents per individual in the State, an expense of no importance, considering the great good which will be derived from the new law. First, that this system will do away with the holding of elections in school-houses, which will be conducive to the "good temper" of the teacher, and the health of the pupils; second, that in contradistinction to the old law, no loafing will be tolerated

around the place of election, and electioneering will virtually be at an end; third, that this will become more truly, a representative government of the people and by the people and the least shadow of a doubt as to the honesty of the election will be dispelled. The Judges, Jennie Smith, J. J. Fryhofer, and D. L. Timbers, decided in favor of the negative. The Gleaner, presented by J. M. Westgate, was excellent, the important feature being a communication to the Society from our old and steadfast member, C. H. Thompson. After recess, was an instrumental solo was by Bertha Steele, after which the usual orders of the day, slightly diversified, were taken up.

A. E. R.

October 14th.

The Hamiltons were called to order by Pres. W. O. Staver at 7:30. Roll-call showed the unceasing interest taken in the Society. Prayer, F. A. Dawley. The following gentlemen were initiated: R. Denny, Doig, V. Metzger, and Brown. The program of the evening was opened by Mr. Bentz with a declamation, entitled "A Similar Case," quite humorous and well delivered. R. S. Vail next read an essay, "Character of Alexander Hamilton." A select reading, "The Mule" by Mr. Gilleece was well handled. An essay, "A Chicago Novelette," by G. B. Norris, was presented to the Society with a very pleasing effect. Debate, question, "Does a scientific course, such as we have here, prepare one better for life, than a classical course?" J. A. Scheel was called to the chair, and W. O. Staver opened the affirmative, in which he explained the object of the two courses, showed that we do not need the dead languages unless we intend to teach them; training given here is such as we can hardly get along without; that one can appreciate the beauties of nature much better after studying the sciences, and those taking a classical course miss the industrials we have here. R. K. Farrar, opening the negative, thought that we get merely the rudiments here, a man is fitted for nothing when his scientific course is finished, and that a classical course fits a man for a leader, enlarges his observation, and helps him to accomplish his undertakings. C. S. Evans continued the affirmative, claiming that our industrials are all practical and benefit the masses; and that we can get more benefit by reading what has been translated for us by men who make that a business. J. D. Trumble, continuing the negative, spoke of the large percentage of Latin and Greek in our language, that we cannot study botany and such sciences to any advantage without an understanding of Greek, and that one can go as high as he please in a classical school. The judges, Conrad, Pope, and Adams, decided in favor of the affirmative. After recess, we were entertained by an oration from Mr. Conrad, on the "Ruins of Time." Mr. Dodds delivered an oration, "Man's Character," which showed careful preparation. I. Jones, music committee, introduced E. L. Frowe, G. B. Norris, and B. N. Conrad, who entertained us with several selections of music. The Recorder was presented by V. J. Standt. Motto, "Don't challenge the 'Hamps' for base ball." The editorial was very pleasing and exhibited considerable skill. The titles of some of the articles were, "A Dream," "The Show," "What Should be Done?" "He Knew the Case," "He Thought He Would Ask Freddy about It," "A Letter of a First-year," and "After the Ball." G. W. Finley gave a discussion "The Lode Stone." W. E. Bryan told us of his voyage over the water from London. Mr. Bryan had his talk well arranged, and to say it was interesting and pleasing is stating it mildly. After new business the Society adjourned. F. Y.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

There are 35 denominational schools in Kansas.

Rawlins County is working for a County High School.

The publication of the *Kansas Magazine* by the young men of Atchison has suspended.

Thirty Brown County school teachers have attended the World's Fair and Doniphan County has sent twenty-seven.

Superintendent Swinehart has begun the publication of an educational paper for the benefit of Ford County schools.

The Baker University Athenian Society decided in a debate that the 10 o'clock retiring rule should be abolished. Some of the students wish the faculty would decide the same way.

The Twenty-Sixth Annual Meeting of the Kansas Academy of Science will be held at Emporia on Oct. 25th-27th. It is hoped that this College may be represented at this meeting by its usual strong delegation.

Several students at Washburn College, Topeka, Kans., planned and carried out the scheme of greasing blackboards. The scheme worked, and hence no recitations in mathematics for several days past.—*Beacon*.

"The little red school house on the hill" is often mistakenly located in an unseemly out-of-the-way place where there is no beauty without or within—a condition which encourages disorder and brutality in children.

The *District School*, the organ of the teachers of Shawnee County, is one of the neatest and best edited little educational periodicals that reaches our reading table. It is published by Supt. W. H. Wright, and costs only 25 cents a year.

The State Normal School and a Topeka contractor by the name of Anderson had ill-luck last week, the one losing \$1000 and the other a large job. By neglecting to file a certified check for ten per cent of the amount of his bid, J. M. Anderson lost the contract

for the new wing of the Normal School, although it was nearly \$1,000 lower than any other, and the State Board of Public Works awarded the contract to F. A. Willard of Argentine, the next lowest bidder, at \$42,470.

The first meeting of the Wabaunsee County Teachers' Association was held at Alma on Saturday, October 7th. The attendance was good, and much interest was manifested by all present. The next meeting will be held at Eskridge on November 4th.

Parents need to consider that newspapers which have their columns filled with catch-penny schemes, guessing contests, etc., exert a bad influence on children by stimulating the gambling spirit as well as by leading to bad investments of small sums of money.

The State Board of Education will meet at the Superintendent of Public Instruction's office October 30th and 31st. It will devote most of its time to the granting of conductors' and instructors' certificates, and will also consider the courses of study of Kansas colleges. More colleges will apply for permission to graduate teachers.

The Grand Lodge of Odd Fellows at its annual session had an exciting debate over the De Boissiere Orphans' Home proposition, which was finally carried by a vote of 239 to 40. A per capita tax of five cents to pay the expenses of the school for the ensuing year, and a per capita tax of \$1 to pay off the debt on the property were assessed. This contribution will be sufficient to start the home for a bout 40 children.

Bethel College at Newton, the only institution operated by the Mennonites in the United States, has been dedicated. The Rev. C. H. Wedel, as President, and five professors were installed. The college has been six years in the building, and has five buildings and a campus valued at \$200,000, besides an endowment of \$50,000. One hundred students are enrolled. The site of the college was christened "Hebron."

The Shawnee County *District School* reports that "The Reading Circle is booming. A circle has been organized at Oakland and meets regularly every Friday night. New members are added every meeting. A number who have never taught, but expect to soon, have taken up the work. Rossville has organized a circle, which meets every Friday evening. Dover organized three weeks ago, and is progressing nicely. A circle will be in progress soon at Auburn."

The Baker *Beacon* complains that the Baker University and its work does not stand before the people of Kansas as it should, and adds: "It is the thought of the persons having the scheme in charge to send bodies of students over the territory of the Kansas and South Kansas conferences to give gymnastic drills, concerts, and readings. Along with these there comes a lecture by some member of the faculty. The scheme thus presents itself as one of much worth, and the benefit that will be derived by the University is by no means an open question. The *Beacon* stands first and last a supporter of all movements that will make Baker University a better and a grander honor to Methodism and a college alive to the needs and demands of the age."

Ottawa University was founded as an Indian school. The Ottawa Indians gave 20,000 acres of land to establish the University. The Indians were to have fifty scholarships during the thirty years and ten perpetual scholarships. These scholarships were to be held by the Indians' children who were between the ages of four and fourteen. The institution was opened in 1865, and was continued until 1868, when it was suspended until the college building should be completed. The Ottawa Indians, who had in the meantime come into possession of their reservation as individuals, disposed of their property and removed to the Indian Territory. By the advice of lawyers they began a litigation to recover their land grant to the University. At the close of a long litigation the land reverted to the Ottawas, except a section on which the University is now located. In 1869 the building now known as the Laboratory and Society Hall was completed. It cost \$40,000, a large part of which was raised by Rev. Robert Atkinson, in the East. The University has a beautiful campus, and still owns nearly 400 acres south of Ottawa. About two years ago the new college building and Carlton cottage were completed at a cost of about \$20,000.

We clip the following from a monthly report on the schools of Kansas City, Kansas:—

"A great decrease in the number of cases of tardiness has marked the first month of the school year in this city. Tardiness is considered by teachers as one of the greatest evils of the school system, and one of much detriment to a good advancement of the pupils. Superintendent Hanks has prepared his monthly report for September, and in it he makes a comparison of the month with the first month of the last school year. Last year there were more than 1,468 cases reported for the first month, while this year the number was only 664, with an attendance of 6,800 pupils. The decrease is more than 50 per cent, while the actual attendance was 400 more than the enrollment last year. Superintendent Hanks says that the improvement is due to the adoption by the Board of Education of a rule which provides that all students whose deportment is 95 and class standing is 90 per cent, and who have not been tardy a single time nor absent more than five days during the term, and who have not a single unexcused absence, may be excused from final examination. This gives the pupil an incentive to be at school promptly on time. The report also shows that the attendance of the High School has increased this year, the enrollment being 205, while the first month of last year it was only 143."

Economy in the Kitchen.

There may be room for exaggeration in the statements of Mr. Edward Atkinson as to the cost of healthful food for a man and how it may be prepared nutritiously. But when he claims that a man can live on ten cents a day, having good food, plenty of it, and cooked in a more appetizing way than is the rule in 99 out of 100 households, and is willing to risk his reputation on the truth of his statements, it becomes worth while to look into his theories. Mr. Atkinson estimates that the food, fuel, and liquor bill of the country is about \$6,000,000,000 annually and that at least one quarter of this is wasted in bad buying and poor cooking. If the \$1,500,000,000 lost every year were the only result, it might be borne with equanimity, but more than this is the ill health, the loss of physical power through insufficient nutrition, and the demand of the barbarously treated stomach for stimulants. From these causes come poverty, intemperance, and crime. The liquor saloon is looked upon as one of the greatest of crime schools. But if the full effects of badly chosen and badly cooked food could be traced and calculated it would probably be discovered that the kitchen is a greater breeder of criminals than the grog shop. The ideas of any man who proposes to lessen the effects of this great source of crime and suffering deserve attention.—*Philadelphia Press*.

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SOME STAPLE FOOD PLANTS.

BY PROF. A. S. HITCHCOCK.

THE human race depends for its chief supply of vegetable nourishment upon comparatively few plants. These plants furnish in various countries the staple foods which are usually starchy. These may be divided into four divisions according as the part used is the seed, the fruit, an underground portion, or the stem.

WHEAT (*Triticum vulgare*).

All the various kinds of wheat belong to a single species, but from its antiquity the number and diversity of its varieties are very great.

The earliest record of its cultivation appears to be 3359 B. C., in Egypt. It was also cultivated at an early date in China and India. At present the evidence points toward the region of the River Euphrates as being the original locality of the species in its wild state. At present it is cultivated in all temperate regions of the globe, but especially in the northern hemisphere. The various stories about the germination of wheat and other grains found in ancient Egyptian tombs appear to be without foundation. This is especially true of the so-called mummy wheat.

BARLEY (*Hordeum vulgare*).

This has about the same history as wheat, having been cultivated at a very early period in China and India. It was probably originally from Persia.

RYE (*Secale cereale*).

This grain came into cultivation in more recent times, probably about the beginning of the Christian era. Its origin was probably in Hungary.

RICE (*Oryza sativa*).

Rice probably was originally from Northern India and Southern China, but has been cultivated in China and Japan since the earliest historic period, and since then has spread over all Southern Asia, Northern Africa, and the warmer portions of America.

CORN OR MAIZE (*Zea Mays*).

While the cereals are all natives of the old world, corn is certainly a native of America, probably of Mexico, though it has never been found wild. This origin is supported by the fact that a closely allied species has recently been found wild on the tablelands of Mexico. DeCandolle favors the Andes of Columbia as the original home of this plant from the fact that it was cultivated by both the Aztecs and the Incas, and since the two nations had no communication an intermediate origin is indicated. All the above-mentioned grains belong to the grass family.

BEAN (*Phaseolus vulgaris*).

The common kidney bean has been cultivated in Europe, Asia, and Africa for at least three hundred years, but its early history is involved in doubt. Its American origin was not suspected till some seeds were discovered in ancient Peruvian tombs. It is now nowhere found wild, and its origin may be placed with some doubt in Peru. Of allied plants, the Lima bean comes from South America, and all the other peas and beans from the Old World.

BREAD-FRUIT (*Artocarpus incisa*).

The bread-fruit is extensively cultivated in the East Indies, and forms the chief food in many places. The fruit is multiple, like the osage-orange, which it much resembles in appearance, but is larger. The best varieties are seedless, the species being propagated by buds and suckers. The fruit is cooked, and then resembles bread in consistency and taste, whence the name. Although found at present all over the tropics of both continents, it was without doubt originally from Java or neighboring islands. The same remarks will apply to the Jack-fruit (*Artocarpus integrifolia*) which is considerably larger, weighing as much as eighty pounds. They both belong to the Nettle family along with the elms, mulberry, hop, and osage-orange.

BANANA (*Musa Sapientum*).

This fruit, originally from Southern Asia, has spread all over the tropics of the Old World, and since the Spanish conquest has been widely cultivated in the tropics of America. It is usually seedless, and is propagated by suckers. In this country, bananas are used chiefly as a fruit, the importation having increased from a few hundred bunches in 1860 to 325,000 tons in 1892. However, in many parts of the globe, the fruit furnishes a staple food for a large number of people. It is largely used for this purpose in this country by the lower classes, especially foreigners, on account of its cheapness and its nutritious qualities. The plant is an annual, but grows to the size of a small tree and bears a single bunch of fruit. It

is a monocotyledon allied to the canna and ginger.

PLANTAIN (*Musa paradisiaca*).

The plantain is considered by many authorities to be a variety of the banana. Its origin and present range is the same. It is used cooked, while the banana is usually eaten raw. The plantain without doubt furnishes food to more people than any other plant, and in the thickly populated portions of Central Africa it is almost the only food used.

POTATO (*Solanum tuberosum*).

The potato which is found wild in Chili, and was cultivated by the Incas all through the Andes region, was introduced by the Spaniards into Europe soon after the conquest. It is now widely cultivated in temperate regions. The potato is a tuber, that is, an underground stem. It belongs to the nightshade family along with the tomato, tobacco, and red pepper.

SWEET POTATO (*Ipomoea Batatas*).

There is considerable dispute as to the origin of this plant, but the evidence seems to be in favor of tropical America. The part used is the fleshy roots instead of tubers, as in the common potato. The name batata, by which it was originally known, is American. On account of the similarity of the parts used, this name was corrupted and transferred to the plant now known as potato. The sweet potato is now cultivated in the warmer parts of both hemispheres. It is a member of the morning glory family. Flowers are seldom produced outside the tropics.

YAM (*Dioscorea* species).

Yam is sometimes applied to a variety of the sweet potato, but the true yam is the fleshy root-stock of a very different plant, being a monocotyledon, while the sweet potato is a dicotyledon. A yam may weigh fifty pounds, and is long and irregular with a white, starchy interior. It takes the place of the potato in the tropics, and is abundantly cultivated in both continents. The various species are natives of Southern Asia.

CASSAVA (*Manibot utilisima*).

The fleshy roots of this plant, a member of the Euphorbia family, contain a starchy substance, together with a poisonous juice. It is a native of Eastern Brazil, but is now widely cultivated in the tropics, especially of America. The roots are peeled and reduced to a pulp, the juice then being expressed and the resulting flour baked into cakes. The refined cassava, manioc, or mandioca, is tapioca. This is the staple food throughout the Amazon region and some other parts of the world.

SAGO.

This is obtained from the pith of certain trees, mostly palms, and especially the genus *Sagus*, native to the Pacific Islands. It forms the staple food of the people of this region, and is also sent in a refined form to Europe and America. The trees are cut down to obtain the pith, which is preserved under water by the natives.

A REFRACTORY EYE.

BY SARAH MOORE, '93.

WE all realize the possession of a pair of eyes, and no matter whether they are blue or gray, black, brown, or even green, we are happy in their possession when we realize what a dreary world this would be were they closed forever from the scenes they present so faithfully.

Then, as we make a psychological study of the eyes, and discover how necessary to complete vision a pair of these organs are, there is a genuine feeling of satisfaction in the thought that we have the required number.

Do you ever remember a time when you didn't have use for them both? Well, that time came to me soon after I became a student at this College and had begun the microscopic study of botany. The Professor in charge arranged the microscope over a dainty bell-shaped flower, and putting two needles into my hands requested me to dissect and note the structure of the beautiful little object. I eagerly took the needles and advanced to the microscope ready and willing, in the name of science, to witness the destruction of this little innocent piece of nature.

There was room for only one eye to be a witness to the scene; the other stubbornly refused to close and leave its companion free to enjoy the sight, and I stood helpless, realizing the fact that I had one eye too many or one hand too few; for with both hands engaged there was no way of compelling that other eye to remain in the back-ground. The only way to proceed was to abandon one needle, work with one

hand, while the other hand was used to keep that refractory eye in subjection.

The same difficulty again confronted me when I saw a rigid grasshopper beneath my lens awaiting its turn as a victim of the dissecting table, and again as in the former case that eye had to be kept shut by forcible means; and now when the earth is putting on her fall dress of red and gold, as with chain and transit we prepare to discover how many mistakes old Mother Nature made when she turned over to man the College farm, we became aware again of the presence of that superfluous eye. The question now is how to hold it shut, as of yore, adjust the instrument, and give the necessary signals to my classmate who is measuring the ground and driving the pins.

This seriously makes me consider why, if two eyes are really necessary to vision, it would not have been a better arrangement to have had them situated both close together just above the nose; they could then have had an equal chance to enjoy together all the wonders revealed by lenses, they could both have watched the eclipse of the sun through a smoked glass, and if they belonged to a man they could take a double sight on the game when he went hunting, and the student would no longer find himself in a dilemma.

ENGLISH INDUSTRIAL LIFE IN THE MIDDLE AGES.

BY PROF. FRANCIS H. WHITE.

IMAGINE yourself in the thirteenth century. You desire to become acquainted with the life and surroundings of the English people—not the noble and wealthy, but the middle and lower classes of society. Take your stand at the village mill—a water or perhaps a wind mill—where so much of the local activity centers, and look down the long street. On either side you see low, dirty frame houses surrounded by yards in which, close to the house door, stands the unsightly and malodorous refuse pile. The scene suggests neither beauty nor cleanliness.

Entering a house, you step at once upon a floor of bare earth, made more solid sometimes by the use of split flints. Upon this ground floor the family live, though but few articles of furniture, beyond some chests, are visible. The fire burns on a little elevation made of clay, and the smoke and odors are diffused around the room until they can find a way out through the door or some other aperture; for fireplaces and chimneys are found only in the manors and castles. The sleeping apartments are on the floor above. Such are the surroundings of the middle class; the peasants' dwellings are even less comfortable and attractive.

What of their occupations? These houses lining the village street are the houses of the cultivators of the fields that stretch away on either side. Some of the tracts of land they own, others are rented from the lord of the manor, while others still are common property. During the first few centuries of the Middle Ages, English life was very largely rural. There were, however, some large towns, and in them dwelt the merchants and artisans—classes constantly increasing in numbers and importance.

The period from the eleventh century to the fifteenth is one of great interest, there are so many "beginnings." Space permits but the mention of a few.

Authorities differ as to whether English social history begins with serfs or freemen. Some of the later investigators incline to the belief that if the free, self-governing village community was the usual form of Anglo-Saxon social life before coming to England, it was never transplanted. Many facts seem to point to the conclusion that "the mass of the people in England were from the first in a servile condition, and that their history up to the Norman Conquest, 1066, and beyond has been one of progressive amelioration."

However society may have started, there is no question that shortly after the Norman Conquest the larger part of England was dotted over with manorial estates, and that most of the inhabitants were bound to give all or a portion of their labor to the lord of the manor with which they were connected. They had also certain payments to make if they or their children left the estate.

But gradually a body of free tenants arose, and in the following ways: Services were commuted for money payments; portions of the common land, the waste, were enclosed and rented to those sons, perhaps, who were unable to secure land from the manor; parts of the fields which the lords had cultivated for themselves were rented to tenants. In this upward movement we see the operation of that independent, progressive spirit so characteristic of the Teutons, and especially that branch which we call Anglo-Sax-

on. The development was not completed in the Middle Ages. It has continued ever since, and today is visible in both Europe and America, in Australia and South Africa,—wherever the Teuton has gone,—increasing the rewards of labor, breaking down class barriers, and striving for equality not only in the financial and political, but also in the mental condition of all. A striking contrast, surely, to the chrysalized society of Egypt, India, and China.

Another interesting feature of this period is the gradual increase in the use of money. From barter, the exchange of articles and services in kind, a comparatively easy matter when there was so little trade, there was a constant movement towards a freer exchange of commodities by the use of money. The convenience of a medium of exchange is incalculable. It may seem strange, perhaps, but money was undoubtedly used as a measure of value in parts of England before it was commonly used as a medium of exchange.

The growing trade of the towns, the king's need of money to carry on foreign wars, the crusades, church building and dues, commutation of manorial services for money,—all made it necessary to provide a considerable amount of coin. Although the government constantly claimed and exercised the right of regulating and supervising the coinage, it did not thoroughly control the work until late in this period. Stringent laws were passed from time to time, and vigorous efforts made to prevent fraud and improve the coins.

In the economic history of England the way in which interest was regarded at first, and its final legalization, is worthy of attention. When the Christian church gained ascendancy in the Roman Empire, the evil plight of the debtor was visible on every hand. The Church, therefore, feeling deep sympathy for the poor and the oppressed, looked with no friendly eye upon the money lender. The Biblical injunctions to love neighbors and to do good to others seemed to make it certain that the lending of money for interest was sinful. Then, too, they argued, money was not productive; it could not multiply itself as, for instance, grain does when placed under proper conditions, and therefore any interest or recompense for its use was unjust. These and other reasons were convincing to the leading minds in both Church and State. So strongly impressed were the people of the early Middle Ages that the taking of interest was sinful, that not only the Church, but Parliament, municipalities, and trade guilds condemned the practice and strove to suppress it.

The effort was vain. Economic conditions changed; towns grew, domestic and foreign trade increased, the demand for wealth in the portable form of money increased. Gradually there grew up certain practices in interest taking that evaded the common law, and eventually broke down the doctrine of the sinfulness of interest.

One of the methods of evasion was developed from a principle of the Roman law which the church had accepted, namely, that a creditor could claim damage for a failure on the part of the debtor to pay the amount borrowed at the appointed time. The plea was that if the creditor had had his money he could have invested it in some profitable enterprise or perhaps saved himself from loss. It is easy to see how the law against interest would be evaded on this ground: the time of free loan would be made very short or the time of payment placed when the debtor would not be apt to have the money, then damages could be legally demanded on the failure to repay according to contract; the damages or compensation for loss would take the place of interest.

Another method was to purchase rents. Suppose a sum of money was desired by a squire, or anyone owning property that brought in rents. A money lender would buy a portion of his estate and thereby become entitled to the rents of that part while the debt remained unpaid, the debtor reserving the right to buy back the privilege or property granted.

Other methods were in use to cloak the transaction,—buying imaginary bills of goods at high prices on credit; including the interest with the principal in the note given; forms of partnership, etc. The English government finally concluded in the sixteenth century that the welfare of the country demanded a removal of the prohibition on interest, and it was accordingly legalized and the maximum rate fixed at ten per cent.

Unfortunately, historians have not given as much attention to the condition of the common people, the farmers, the merchants, the artisans, and their industrial life, as they have to the political and military events. Still there is considerable information available. The most helpful works on this period are the comparatively recent ones of Rogers and Ashley, and it is upon them we have relied for most of our facts.

The Happiness of Farm Life.

To those of us who have lived on a farm, the word is very suggestive. If we were born and reared there, it is doubly so. There are thousands of tender and dear associations and recollections stored away in the archives of memory, which the mere mention of the word calls forth. To us, the farm is not an abstraction, not a generality, but something filled with life, a place where every window and room, every tree and shrub, have a distinct personality of their own. It is the scene of our youthful exploits which gave the charm to life's bright morning. We remember how the aspect of nature changed with the changing seasons. Spring, with all of its delicate beauty of budding trees and flowers; Summer's mature loveliness; the crimson and gold of Autumn; and the chill, gloomy bareness of Winter—all these phases of nature on the farm recur to us as the familiar faces of friends. We remember with what delight we espied the early violets in the woods, and watched the young lambs gambol in the pastures; how we tracked out the early ripening fruit in the orchard, and disputed with the crows the right of possession to the early cherries; how we gathered flowers in the early morning while yet the dew sparkled on the petals. We remember the many mornings when, with books and dinner pail, we started on our walk to the little school a mile away.

Each feature of our home lives is a distinct and vivid recollection. Some, we recall with pleasure, others, it may be, with pain, for farm life is not all sunshine and roses. In the majority of cases, it is filled with long hours of toil, and but little time for recreation; too often, indeed, it is but little more than systematic drudgery. But is this necessary? Do we ever think to inquire how much of the inconvenience and hardships of farm life is caused through ignorance and indifference? The old foggy notion of housework was that it required no intelligence nor skill, and this idea prevails largely in regard to farming.

So we can readily see what chaos may be expected from the ignorant, untrained supervision of both the indoor and outdoor departments of the farm. It would be difficult to conceive of anything more wretchedly uncomfortable and inconvenient than the arrangements on many farms. It would seem as if they had been planned with a view to making life as miserable as possible.

But how are the defects to be remedied? How is farm life to be rendered attractive and happy? The first requisites are evidently skill, judgment, and taste in the occupants of the farm. Without these qualities, we cannot reasonably expect the beautifying effects and influences which it is possible to produce from the material found on the farm.

Many people have a horror of farm life; they associate with it hours of tiresome toil with small remuneration, cheerless, uncomfortable surroundings, seclusion, and a dull, humdrum existence; and indeed this is frequently the exact state of affairs. But when we consider the boundless resources and possibilities of the farm under ordinary circumstances it seems to us as if it might be made a veritable paradise. There is an unlimited quantity of pure air, plenty of land and water. If there is no natural timber, it is possible to have groves in a few years. The trees in these can be tastefully arranged in various forms, and grass plats and flower gardens may be laid out with small expense and little labor. A large, level lawn adds greatly to the attractiveness of a place, and the labor necessary to keep it in perfect order is simply pleasant recreation for any member of the family. Trees should be planted here and there over the lawn, and rustic seats placed under them, with vine-trellised arbors at intervals. A profusion of flowers and shrubs carefully and tastefully arranged will add to the beauty of the whole, and make it form a delightful retreat—a place for rest and pleasure.

The houses should be built with special regard to the comfort and convenience of the occupants, large, bright and airy, with ceilings and numerous windows. The planning of a house requires thought and taste. It is no more expensive to build a conveniently arranged house than it is to build an inconveniently arranged house. Brain used unsparingly never fails to save muscle, and usually saves money as well. Inexpensive furniture may be quite as pretty and comfortable as the most costly, and very many beautiful articles of one's own contriving may be used to decorate the home. Flowers, pictures, and all the various pretty contrivances used in embellishing a home are educators of the highest order, and contribute greatly to the refinement of the household.

After all, the great need of the farm is educated, refined men and women; such people will make their outward conditions and surroundings attractive. There is no reason why people who raise corn, wheat, and potatoes cannot and should not be as intelligent and live in as attractive homes as those who sell dry goods and make laws.

Let the farmer boys and girls be carefully trained and thoroughly educated, taught to entertain sensible views of all the relations and duties of life, and in a short time we shall find farm life as attractive as life anywhere else.—*Correspondent Western Rural.*

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

C. D. Rees, Second-year, visits the Exposition this week.

Rev. Mr. Guild conducted the devotional exercises Wednesday morning.

The walls of the new steam plant are about ready for the roof, and the chimney is begun.

Miss Henderson visited classes Wednesday morning with her friend, Miss Mabel Gillespie.

Mrs. Patten, of Silver Lake, visited her son and daughter in College several days this week.

The oldest son of Prof. Walters has been quite ill the past week from inflammatory rheumatism.

Prof. Georgeson contributes an article on "Management of Manures" to this week's *Kansas Farmer*.

Nora Fryhofer attends the convention of the Epworth League at Marysville today as delegate from Manhattan.

Regent Street represented the College Association last week, and took in the great fair before and after the meeting.

Assistant Carleton represented the College in the meeting of the Kansas Academy of Science, at Emporia, this week.

Miss Willard, in First-year classes, left yesterday for Chicago, to witness with her father the closing scenes of the Fair.

Inez Palmer, Second-year, is a delegate from the Manhattan League to the Epworth League Convention at Marysville.

Anderson, First-year, was obliged to leave College this week on account of a painful swelling in his ear. His home is at Valencia, Kan.

Mrs. Georgeson returned from Chicago this week, where she has spent the last six weeks under care of a physician, much improved in health.

Prof. Olin cared for the President's class in Psychology last week, being aided by Prof. Jones in keeping up the work in First-year English.

Prof. Hood leaves for Chicago today to hasten the packing and return of the College exhibit, all of which will be put to good use at the College.

The two huge derricks which command all parts of the new building are in place, and attract the attention of town people looking toward the College.

Professors Georgeson and Mayo shared in the meetings of the World's Congress of Agriculture last week, and are again at their posts of duty here.

The new company of cadets, drilling daily at 4 p.m., show commendable proficiency already, and will soon be ready to take their turn in battalion drill.

A class of Post-graduates in scientific studies are meeting twice a week for a recitation in Latin under direction of M. A. Carleton, Assistant in Botany.

Professor and Mrs. Popenoe returned this week from Chicago, where they spent two weeks with much satisfaction among the great crowds of the grand Exposition.

Hon. David Overmeyer, of Topeka, is expected to give one of the lectures of the Economic Course before the middle of December. His subject is not yet selected.

Hon. S. O. Thacher, of Lawrence, will deliver the lecture of November 10th in the Economic Course upon "The Credit System: Its Uses and Dangers in Exchange."

The *Kansas Farmer* will soon begin the publication of a series of practical entomological papers from the pen of our Prof. Popenoe. The articles will be illustrated.

I. A. Robertson, Fourth-year, was in charge of the printing classes during the Superintendent's absence, being relieved during one class hour by F. J. Smith, Third-year.

The roof of the Chemical Laboratory, thanks to the vendors of the paint which was so unsatisfactory, has received a new coat which promises to make good all deficiencies.

Superintendent Thompson returned on Saturday last from the Chicago Exposition, having enjoyed his brief visit in spite of a severe cold brought on by Chicago chilliness.

Regent Wheeler was a delegate to the World's Congress of Agriculture, and registered as a visitor in the College Association. He remained to see more of the fair this week.

Have you ever noticed that, as a rule, the best ball players, the best athletes, are the poorest students? While there have been some exceptions in the student history of this College, they are so rare as to be particularly noticeable, and any observing person who

has for the past few years witnessed enough of the games to identify the players can name in a few moments the students who were good in both sports and studies.

Hon. H. C. Wyckes, Secretary of the State Board of Public Works, is spending a few days here, overseeing the buildings in progress, during the absence of Superintendent Newman.

The *Western Homestead* reproduces in full the excellent article, "Discontent on the Farm," recently published in the *INDUSTRIALIST* from the pen of F. J. Smith, Third-year student.

Dr. Lockwood, of the Bible Society, led in Chapel exercises Monday morning, and gave a good word of cheer to the students. Judge Pipher acted as guide to the Doctor in his brief visit.

The full allowance of 5000 ball cartridges for target practice was received last week from the U. S. Arsenal at Rock Island, Ill., and arrangements for practice were completed yesterday.

A pen thrust deep into the palm of his hand and there broken off inflicted a painful wound upon E. R. Barker Wednesday forenoon. Dr. Mayo's skill was necessary in removing the broken steel.

The abolition of fees for instrumental music lessons has brought numbers of applicants for instruction. The Faculty will announce next week the regulations under the new regime to go into effect November 1st.

The E. B. Purcell Mercantile Company are selling a neat souvenir of the College in shape of a small earthen tray with a picture of the College Hall in the center. Students will find it a neat Christmas gift for some friend.

Every member of the Faculty, twenty-two in number, has had his turn at the Fair and come back earnestly wishing that weeks could have been stretched into months. All but one of the Regents have had a like experience.

The *Manhattan Homestead* revives an ancient ideal cut of the College perpetrated in 1878, and considered highly prophetic. Today it falls so far short of reality as to seem almost a caricature. The *Homestead* has our gratitude for good will and good words.

There will be no lecture next Friday evening in the Economic Course, the political rally in Manhattan making it difficult to secure a lecturer. On Friday, November 10th, Hon. S. O. Thacher will speak upon "The Credit System: Its uses and dangers in exchange."

A neat reversed blueprint of the new Science Hall in perspective was received this week with the compliments of the State Board of Public Works. It has been hung in the hall where all can see the general plan of what promises to be the best building on the grounds.

The base ball season is past, but there is thus early much talk of what will be done next spring. A junior member of the Faculty club has expressed the opinion that "his nine" will everlastingly beat the Fourth-years, while the confident Second-years signify their intention of throwing down the gauntlet to all the clubs, combined or singly. The Fourth-year, Third-year, and First-year clubs hold their own counsel and look wise.

President Fairchild reports the annual meeting of the Association of Agricultural Colleges and Experiment Stations interesting and important in some respects, though somewhat shortened by the multitude of attractions in the general Agricultural Congress. He was made Chairman of the College Section of the Association for the year 1894, and contributed by invitation a short address upon "Intellectual Growth in Agricultural Courses."

The Botanical Department, while carrying on investigations with corn smut, has recently repeated Brefeld's experiment of germinating the spores in nutrient solution (Nährlosung), a decoction of manure. An effort is being made to determine the life history of the smut, not yet known. A diligent search for rust in young wheat has been made during the past week in the vicinity of Manhattan, resulting in an entire failure. However, volunteer wheat and oats show it in great abundance. The species (*Puccinia graminis*) is different from the smut common last year.

The Third-year party at the home of Laura McKeen, a member, on the evening of the 13th was an enjoyable affair. About sixty Juniors were present. Following refreshments, the following program was rendered:—

Toast, "Our Hostess,".....F. J. Smith
Response.....Mrs. McKeen
Toast, "Our President,".....R. J. Barnett
Response.....Miriam Swingle
Toast, "Our Class,".....W. H. Phipps
Vocal Solo.....Olive Wilson
Instrumental Duet.....George Fryhofer and Olive Wilson
Vocal Duet.....Elva Palmer, Nora Fryhofer
Vocal Quartette.....Messrs. Patten, Fryhofer, Joss, and Smith

This College had scant representation in the meeting of the Kansas Academy of Science this week, not from lack of interest on the part of members, but from a combination of circumstances making it difficult to attend. This is review week for mid-term examinations, and required the attention of professors, especially of those who have been called away during the previous weeks of the term. Others who would have attended some of the sessions were deterred by the roundabout journey to Emporia, requiring a night at Junction City or a night start from Manhattan.

A Division of the Third-year Class entertained the Chapel audience of students and visitors as follows: "Shall the Illiterate be Disfranchised?" V. Emrick; "Opposite Examples," L. W. Hayes; "The Con-

secrating Effect of the War Freedom," Lucy Ellis; "Eulogy on Alexander Hamilton," G. W. Fryhofer; "The Study of Nature," Nora L. Fryhofer; "Should Moderation be used in the Toleration of the Liquor Traffic?" E. R. Farwell; "The New South," R. K. Farrar; "Palladium," E. L. Brockway; "A Hunter in search of Truth," Hortensia Harmon; "Wendell Phillips' oration on Tourssaint L'Ouverture," E. H. Freeman.

The fifth lecture in the Economic Course was given last evening by Prof. A. S. Olin of Lawrence. His theme was "Principles of Early Federal Taxation," with an effort to show the more or less successful application of Adam Smith's general principles in the drift of legislation down to the high-water mark of protective duties in 1828. Various forms of direct and indirect taxation as tried in early days were examined and their tendencies shown. Incidentally some method of fair adjustment to incomes was commended as desirable, though not as yet tried except in war times. The lecture was enjoyed by an audience of nearly two hundred, mostly students.

GRADUATES AND FORMER STUDENTS.

Laura Day, '93, has resumed her work in the library after an absence of two weeks.

A daughter was born, October 4th, to I. D. Gardiner, '84, and Ida Quinby-Gardiner, '86, of Bradford.

Ruth Ellis, student in 1889-90, came from Havensville two weeks ago to keep house for her sister Lucy, Third-year student.

Emma Kittlaus, of Leavenworth, student in 1887-8, has just returned from an extensive sojourn in England and Germany.

R. S. Reed, '92, writes from Cedar Point, Kansas, where he is teaching, after a pleasant fortnight at the Chicago Exposition.

C. S. Criswell, Third-year in 1892-3, is home on a visit; and to his dismay is putting in his time being quite sick with diphtheria.

H. P. Wareham, Second-year in 1888-9, is making many improvements in the Manhattan Opera House, of which he is owner and manager.

O. L. Utter, '88, writes from Baldwin, Kans, of his work in Baker University, where he expects to graduate from the classical course next June.

Mayme Houghton, '91, A. D. Rice, '91, Ivy F. Harner, '93, and W. E. Smith, '93, read papers at the last meeting of the Riley County Educational Association.

J. N. Emmons, student in 1874-5, now an architect with an office in Chicago, visited the College on Tuesday in company of his brother Frank of Manhattan.

C. G. Clarke, '88, writes from New Haven, Conn., of prosperity in his course of study at Yale and in his home with Mattie Cobb-Clarke, '88, but with kindly recollections of College days here. They visited Chicago and friends in the West last summer.

Frank F. Cheadle, Second-year in 1892-3, writes from his home in Enon, Barber County, that he filed upon a quarter section of land in the "Strip" in the neighborhood of Messrs. Donaven and Coulson. He made a run of eighteen miles on horseback, and had no trouble in securing a good claim.

Died, Wednesday evening, October 11th, Mrs. Clara Newman, wife of Superintendent Newman of this city. Mrs. Newman had been sick several weeks, and all efforts to restore her to health seemed to avail nothing. Mr. and Mrs. Newman were married in June last, and had just commenced life, having established their home here. This is a sad and early ending to a home commenced with hope and promise, and the bereaved husband has the sympathy of all. The funeral services were conducted by Rev. Simms at the home of the deceased, on last Saturday evening, and the remains were buried on the residence grounds west of the house.—*Watonga (Oklahoma) Republican*. Supt. A. E. Newman was a graduate of this College in the class of 1890, and the sympathy of his classmates and friends here goes out to him in his bereavement.

That Nutting Expedition.

The Special Cooking girls carried their umbrellas for a week previous to Saturday, the 21st, to scare away inclement weather, for Mrs. Kedzie had promised to take them on a nutting expedition if that day should be a pleasant one. It proved a perfect day for a picnic. There was something in the very atmosphere suggestive of autumn woods. Close your eyes and you could hear nuts dropping and the rustling of leaves as a rabbit bounded by.

Any one coming into Manhattan from across the Kansas about 1:30 p. m. would have met a party in perfect harmony with the day. A wagonette more than brimful of a delightful profusion of Special Cooking girls and picnic paraphernalia, and four carriages, just as happily laden, brought up the rear, bearing ladies and gentlemen of the Faculty, whom Mrs. Kedzie had invited to share in the good time.

There was a complete throwing aside of teacher and student cares, and an ideal day's outing was the result. There may have been as congenial a company brought together at some previous time, there may have been as many walnuts gathered in half an hour, and just as perfect views seen by as enthusiastic admirers of the beautiful in Nature, and there may have been just as good a supper, with coffee and sausages, steaming from the camp fires, spread out before thirty-two hungry picnickers,—but we don't believe it!

That the supper was thoroughly appreciated, may

be inferred from the remark of one of the Professors, who, upon being told he could halloo for the Cooking Class now, insisted that there was no "holler" in him.

Many deeds of daring and courage might be related. By his timely action, a member of the Faculty saved the untimely precipitation of six girls and a pot of hot coffee. And not only to the gentlemen must bravery be attributed, for a mouse appeared in the midst of the party, and not a suspicion of a scream was heard. (It might be well to remark, just here, that the mouse was going up a tree at the time it was seen).

Evening came—the ride home by moonlight, all too short, the day too short, life too short, when it can be made up in part by such days as this.

Mrs. Kedzie was voted a perfect mistress of the art or picnicking—as indeed of what art is she not? H.

Good Words for Alma Mater.

Several of the graduates are taking other, more advanced courses of study in colleges which rank among the best in the whole country. What they still think of this college is a matter of interest to all.

"The college I am now attending presents a more varied and complete course of study than the Kansas Agricultural College, yet I find the standard of ability is not one whit higher than there."

"I am glad to see the College progressing, and after some experience with the world and with other schools, I am more and more convinced that it is doing a grand thing for the boys and girls of our State. It teaches them to be of use in the world, and not to be above honest labor."

"My thoughts turn very frequently to the Agricultural College of Kansas, and come back each time full of the pleasantest of recollections of the place and what it has meant for me; of the influences that there entered for the first time into my life. The inspirations that have their source in the days spent there, and which still make me enthusiastic are never to be forgotten."

COLLEGE ORGANIZATIONS.

October 21st.

The Webster Society was called to order by Pres. Ames. Prayer, E. H. Webster. The Society welcomed as new members J. R. Henry, J. P. Scott, and S. M. Hanlon. The programme of the evening was opened by a debate. Affirmative, E. H. Webster and F. E. Uhl. Negative, J. C. Wilkin and E. R. Farwell. Question, "Resolved, that the opening of the Cherokee Strip was not a detriment to the State of Kansas." The affirmative claimed that when the lands were opened large herds of cattle in the Strip were broken up, and as these herds could be raised much cheaper than the farmers of Kansas could raise them, the opening of the Strip will be a benefit to the farmers. The people that go there are "no good" here, as shown by the Fourth-years who went there! It will also have a tendency to stop the hot winds when it is populated. The negative claimed that it is a question of breaking up the soil helps the climate; that it is the enterprising citizens that go, and not the poor worthless ones. R. P. Newman delivered a good declamation entitled "Our Flag." An essay by A. G. Bittman, on "The Future of Electricity," was very good, well written and read. He gave the advancement of electricity up to the present date and prospects of its future. J. Stingley entertained the Society for a short time with a good speech. J. W. Finley gave a select reading on a "Junior." Under the direction of the President, the Society sang in concert "America." W. J. Rhoades had all the news of the day. W. A. C.

October 20th.

The Alpha Beta Society was called to order by Pres. G. L. Christensen. Elva and Inez Palmer rendered a duet, "Whispering Hope," Bertha Steele accompanying on the organ. Prayer was offered by Geo. W. Fryhofer. Mr. C. B. Harling became a member of the Society. The regular program was opened with a select reading, "Lady Chair," by Miss Inez Palmer, followed by an essay by A. C. Peck, describing the feelings of the new student when making his first trip through town. The question, "Resolved, That in literary societies the question should be opened to general discussion, after having been opened by the leaders," was argued on the affirmative by R. W. Clothier and W. N. Coffey. C. C. Smith, seconded by Gertrude Havens, argued the negative. The affirmative claimed that by such a change the debates in literary societies would become interesting. More of the members would be led to take part in the discussion; that the practice one would get in extemporaneous speaking would be superior to that now had; that as the debate is the most important part of the program, and being thus made prominent, would draw hosts of new members into the Societies. The negative did not believe that more interest would be taken in the debate; that as each member has all he can do, he would not be able to prepare himself on the question, and as a result the work would be shifted onto the few. The judges, Messrs. Hutchings, Ames, and Rogers, decided in favor of the affirmative. An excellent number of the Gleaner was read by its editor, Miss Jennie Smith. Prof. Walters being present, was invited to speak, to which he responded, giving a history of the College from the time when he became a member of the Faculty, seventeen years ago, to the present. The Society extended to the Professor a vote of thanks for this very interesting and instructive talk. After recess an instrumental duet by R. W. Clothier and Grace Secrest. After the usual exercises the Society joined in singing number fifty-six. Thus closed one of the most interesting sessions of the term. A. E. R.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Rev. Mr. Phillips of Scandia has organized a class in Spanish.

Lyons will have a lecture course this winter for the public school library.

The Kingman High School has 59 pupils enrolled. The total enrollment in the city schools is 625.

The Hiawatha school board expect to have the new high school building ready for occupation by January 1st.

Mr. W. S. Belden, formerly a teacher of Brown County, is now in the Government Weather Service at Topeka.

At the State Normal the mid-term class opens Nov. 14th, the second term Jan. 29th, and the winter mid-term April 10th.

The teachers and pupils in the first ward school in Horton furnish a column of interesting correspondence to the *Commercial*.

The State Teachers' Association will meet this year on Tuesday, Wednesday, and Thursday, December 26th to 28th, at Topeka.

One hundred and twenty-five teachers were present at the first meeting of the Republic County Teachers' Association held at Belleville on October 7th.

Supt. Swingle reports the educational meeting of the Riley County teachers at Riley, Saturday, October 21st, as a complete success. Over sixty teachers were present.

The Campbell University *Informer* informs its patrons of the fact that "quite a number of the students and some of the teachers have recently been passing an examination 'on their heads.'"

Prof. J. A. Brown has resigned as President of the Decatur County Teachers' Association, and Prof. H. A. Stowell was elected to fill the vacancy. Miss Lillie Taylor was elected Vice-President.

The first installment of the new school laws has been received at the State House from the State Printer, and the forwarding will begin Monday. It is a neat volume of 150 pages, and shows an improvement over the last edition, especially in its index.

Prof. Francis W. Cragin, formerly of Washburn College, but now of Colorado College of Colorado Springs, is now in Kansas obtaining data for his book on the geology and physical geography of Kansas, which will be issued next year.—*Topeka Capital*.

The foot-ball game between the State University Crimsons and the Baker University Yellows last Saturday at Lawrence was won by the latter, 14 to 12. An immense crowd, including Chancellor Snow and President Quayle, were present, and enjoyed the struggle. Baldwin City is wild over the success of the Methodist boys.

The last *INDUSTRIALIST* stated that the State Board of Public Works awarded the contract for the addition to the building of the State Normal school to F. A. Willard of Argentine at \$42,470. We hear now that the contract was not awarded to Mr. Willard. The Board has changed the plans and specifications so as to make the addition considerably smaller than at first proposed, and has advertised it again.

The State University has received another valuable present by one of its alumni. George F. Gammer has donated the enormous number of 17516 specimens of natural history. The collection consists of his private collection of diptera and other rare and valuable specimens which he has been saving from time to time during the last fifteen years. Gammer went to the University in the '70's and has spent most of his time since then in exploring and collecting in Central America.

State Superintendent Gaines has appointed Superintendent Peairs of Lawrence, Superintendent Clothier of Alma, and Superintendent Pask of Clay Center as a committee to prepare the programme for the superintendents' section of the Kansas State Teachers' Association. As soon as their part of the work is finished and responses come from the appointees the programme will be ready for the printer. This will probably be inside of two weeks.—*Daily Capital*.

Editor John MacDonald of the *Western School Journal* is getting out a little book in paper covers entitled "County Examination Questions." It consists of all the recent county examination questions with their answers. It is a reproduction of the questions and answers appearing in the *Western School Journal*, and will in that convenient form be a valuable help to teachers in class room work. It will comprise about 150 pages, and will be ready for circulation soon.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Expenses.

Tuition is free, and no general fee for incidental or contingent expenses is charged.

Lessons in instrumental music—two a week—are from \$10 to \$14 a term, according to its length; one a week, \$6 to \$8.40. In classes of two or more, the cost is less. One-half is to be paid to the instructor in charge with the first lesson; the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$2.75 a term; for the second year, \$3 a term; for the third year, \$6.50 a term; and for the fourth year, \$2.75 a term. Second-hand books may be obtained at lower prices.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$4.05; microscope for botany and entomology, \$1.50; case, pins, etc. for entomology, \$2.25; herbarium, \$1.50. The total expense for these articles during the four years is less than \$10.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.50 to \$3.50 per week, or table board in student clubs from \$1.50 to \$2.25 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WATCHES, JEWELRY.

J. A. SHELLEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

D. R. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

D. R. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

LAUNDRY.

WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first-class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday (noon train), returned each Friday in time for social and society meetings. Express office will be open Monday, Friday, and Saturday until 8:30 p. m. D. W. March, Agt.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

ALLINGHAM'S MARKET is a good place to buy meats, poultry, and fish. Remember the place when you go down town.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

BARBER SHOP.—Stop in and try Whittington's barber shop. The first on your way down town. I defy competition on pompadours. All work equally first class.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

SAVE THE FERTILIZERS.

BY PROF. S. C. MASON.

IT was the boast of many of the early settlers of Kansas that the soil was so rich that manure was an actual injury to it, making crops grow too rank. If we may judge by the care which some farmers take to keep manure from their land, that opinion must still prevail in the State. Not only do we see manure left in the yards to leach and waste, often for several years, before any attempt is made to haul it on the fields, but the location of the yard is often on the bank of some ravine or stream so that the drainage and wash from the stables and manure piles is at once carried away by rains and the land deprived of even this chance of getting back a part of what has been taken from it.

In feed lots where large numbers of cattle and hogs are fattened, manure of the most valuable quality is produced, because of the highly concentrated nature of the food consumed; yet these yards, for convenience in keeping them clean and because of the better shelter afforded, are oftenest located on a bank where all of the valuable fertilizing material produced is swept away. If we add to such waste the burning over of stubble fields that a furrow may be turned for the next wheat crop and the burning of straw-stacks as soon as the thrasher is clear of them, we will only make a beginning at summing up the sins which the average farmer is guilty of against the soil he believes to be proof against exhaustion.

One great source of waste occurs in nearly every town in the State from the hauling of manure from public and private stables to some common "dumping ground" either on the river bank where the next high water washes it away or to some vacant tract where it either remains to become a nuisance or is occasionally burned. The sandy soil of the bottom lands near the rivers, when heavily manured, affords the very best trucker's soil, and a few market gardeners are taking advantage of such opportunities. So far there is still a great opportunity to utilize what is wasted. While the supply of vegetables is usually equal to the demand, small fruits as a rule are scarce, except in the very eastern counties, and a much greater area might be grown with profit. Large quantities of vegetables might be raised and canned to the exclusion of canned goods from other States. Canning establishments conducted on business principles and not as a "boom" have proved a success in a number of localities, and have contributed greatly to the prosperity of their communities. With the establishment of many more, the industry of vegetable and small-fruit gardening could be greatly extended, and the waste of stable manure from our towns become a thing of the past. Seed farming, or the raising of vegetable seeds under contract with large seed houses in the east, has proved a source of profit to a number of growers, and is a business that is capable of great extension. Where land can be rented at reasonable rates and plenty of manure secured for the hauling, a business of this sort might be built up that would give a handsome return.

If farmers and gardeners alike will learn in advance the lessons which are the very elements of agriculture in the Eastern States, the fertility of Kansas soils may be preserved from exhaustion. At present much of our farming is but drawing upon the capital which should be the inheritance of future generations.

WHITE PINE LUMBER.

BY PROF. D. E. LANTZ.

WITHIN a few years there has been a great advance in the price of white pine lumber. The quality of that offered for sale has also steadily deteriorated until it is difficult to find first-class lumber in the market. When it is remembered that of all the woods produced in the United States the white pine has been of the highest economic value, being more generally used than any other in building and cabinet making, a failure of the supply should be regarded as a public calamity. The wood is light, soft, compact, and straight-grained; and, though easily worked, is capable of taking a high polish. There is no other wood that can take its place in the estimation of the public; and yet, so far as the United States is concerned, the supply of white pine is practically exhausted. For several years past, in spite of a restrictive duty on imported lumber, Canada has furnished an increasing percentage of the white pine offered in our markets.

The white pine (*Pinus Strobus*, Linn.) is common in most of the forest areas of the Eastern, Middle, and

Northern States as far westward as Minnesota, and southward along the Alleghany Mountains as far as Georgia. But in nearly all the region of its distribution in the United States, the specimens left are of inferior development and nearly worthless for lumber. In the region of its greater development, wherever a considerable body of the species was originally found, the lumber man has taken away until but little valuable timber is left standing.

A peculiar circumstance attending the growth of new forests in areas denuded of trees by lumbermen makes the replacement of our white pine forests by natural process of growth an impossibility. When a pine forest is removed, it is followed by a growth of deciduous trees. It is true that a pine growth will often replace a deciduous forest, when that is cut; but our lumber people always take the white pine first, so then when a forest of deciduous trees is cut away there are no white pines left near by to furnish seed for a new forest. The white pine produces seed cones only on rather mature trees. On the other hand, the pitch pine (*Pinus rigida*, Miller), the Tablemountain pine (*P. pungens*, Michaux), and other species found in the same area with the white pine, produce cones on comparatively young trees, and the new growth of evergreens which follows the removal of a deciduous forest is generally made up entirely of these much less valuable species.

These facts convince me that only by systematic efforts in forestry can a supply of white pine be grown for future use, when the great pine forests of Canada, like those of the United States, shall have been exhausted.

The great statesman, William Pitt, declared over a hundred years ago that the timber resources of Canada were "literally inexhaustible." Such, too, were the declarations of many people in the United States as to our supply of white pine lumber. The scarcity is already felt with us, and so rapidly have the last few years made inroads on the Canadian white pine forests that many of their people are becoming alarmed at the prospect of their exhaustion. Correspondents who have investigated the supply estimated that at the present rate of consumption it will last for twenty-five or thirty years. But there is a strong prospect that the present Congress will repeal the duties upon all lumber coming into the United States. Such action will result in greater activity in the lumber business in Canada, and hasten the destruction of her finest white pine forests.

The people of the Canadian provinces seem to be alive to the danger, and they are talking quite generally of the wiser plan of anticipating the future demand by scientific methods in forestry. The Government will be appealed to, and it is probable that European methods in forest management will soon be adopted with a view to preserve a constant supply of white pine for the future. Would it not be wise for our own country to take action looking toward a like object? It is true, it is too late to keep the supply constant here, but the future has possibilities in this direction worthy of careful attention from the States and from the National Government.

Why the Difference in Farming?

In traveling to town farmers often notice two fields of corn on apparently as good land, one of which will yield sixty bushels per acre and the other scarcely thirty. Why the difference? It is not in the original quality of the soil. It is not the season. Nature has done as much for one as the other, and yet one field yields a profit and the other harvests a loss. The only difference possible lies in the management. The important thing to find out is in what particular the difference consists. Two such fields form an object lesson, not merely to the farmers themselves who are fortunate or unfortunate to own the crops, but to the entire neighborhood. A little inquiry will enable anyone to discover to what particular conditions the difference is due. One thing may be set down as certain: in ninety-nine cases out of a hundred it is not luck; the hundredth case is where the crop was damaged by hail or wind. Barring this, for which no man is responsible, and which is beyond any man's control, the difference is one of management. We will mention a few of the causes. One farm may be tilled by the owner, for the reason that the quality of tenants in the States of the West is improving very rapidly. Many tenants are as good farmers as the best. It may be that one is on clover sod, the other on land which has grown two or three crops of corn in succession. The lesson is rotation of crops, and especially of clover rotation. One farm may be drained; the other undrained. The one may have been well prepared, and the other but poorly. The one may have been well cultivated, and the other scarcely cultivated at all. The one may have been

planted with first-class seed, the other with indifferent. One may have been planted with seed thoroughly adapted to the soil and climate, and the other with seed from the extreme south or from the extreme north. These are all matters that can be ascertained definitely, and the lesson that they teach will be a valuable addition to the store of experience.—*Live-Stock Indicator*.

From the Agricultural Congress.

The World's Agricultural Congress was held in Chicago, October 16th to 20th. Many good addresses were delivered and many interesting papers read. Synopses of a few speeches are herewith presented:—

THE FARMER'S OPPORTUNITY.

President Bonney, in his opening address, had this to say:—

"The centrifugal force of society is too weak. The result is that the rural districts are impoverished, while the cities are over-crowded. It is the chief object of this congress to promote such changes as will finally result in a well-established and permanent return tide of the highest and best mental and moral culture from the cities to the farms, thus enormously increasing human prosperity and happiness. We would so change the conditions of farm life that through the world the farmer's home would be a more attractive abode than the city tenement. The preliminary work has been done, public attention has been aroused, and a great revolution in the condition and enjoyments of the agricultural classes will now be regarded as assured. This revolution will include the following results: Association will take the place of isolation. Science will preside over the operations of the farm, increasing its products in guarding against the losses now suffered. Architecture and art will add a thousand comforts to the farmer's home. The farmer will come into proper relations with the manufacturer, the carrier, and the merchant, to the equal advantage of all. The library will be deemed indispensable to the farmer's home, for he needs it quite as much as men of other callings, and has more time for its use. The farmer can make a practical use of more sciences in his work than perhaps any other man. He can study and apply the principles of government in a way of which the city resident can know little or nothing. The farmer should, therefore, generally speaking, be one of the best educated of men. He has such opportunities as few others can command. Why, then, is the farmer not generally more prosperous and happy? It is because he does not more fully improve his opportunity. Labor-saving machines have increased the time at his command, but this additional time has not been used for the best advantage. The remedies for the grievances of the agricultural classes are in their own hands. They can control the destinies of the world if they will."

FARM LIFE A HAPPY LOT.

□ Samuel W. Allerton, General Chairman of the Agricultural Congresses, said:—

"Never in the history of our country has such an opportunity as this been offered, when citizens from every State in the Union and representatives from the Old World can meet to exchange ideas on farm culture, and learn from each other how to develop our land, how to improve our social condition, how to realize the dignity and importance of our calling, and generally, how to benefit ourselves and mankind. General farm culture is an object of highest interest to the whole world, because the farmer is the source of supplies, and to him all mankind must look for subsistence. More than any other which can be named his is the one occupation in which it may be truly said that the people of the whole world have a direct and positive interest, for upon the success of farm culture finally depend all commercial, financial, and industrial interests; indeed, the welfare of the whole body politic largely depends upon the successful farmer. The public press has long been filled with accounts of the discontent and unhappiness of the poor farmer, and the masses of the people have been led to believe that almost any position in life is preferable to that of the agriculturist; but the truth is, there is no other general occupation that affords so great an opportunity to gain a pleasant home and substantial independence as that of the farmer; no other occupation which affords such facilities for the development of morality and the social virtues. It is well known that our large cities are burdened to a large extent with an ignorant and non-productive population, which has neither the opportunity nor the disposition to learn the duties and enjoy the privileges of civil and religious liberty. Such is the nature of agricultural pursuits that a portion of the time of every farmer can conveniently be spent in the study of the institutions of his country and of the branches of learning most useful and agreeable to him."

"Take this great city, with its million and a half of people; take 500,000 out, how does the other million live, compared with the farmer? Any intelligent man would rather have thirty acres of land in the country for a home than to be the best mechanic in Chicago, who gets \$4 per day."

GREETINGS FROM DISTINGUISHED LADIES.

Then Lady Henry Somerset was presented. The audience greeted her enthusiastically. She said she brought a greeting from Frances Willard, who was prevented by illness from coming.

"Tell them," said Miss Willard, "that a farmer's daughter sends a farmer's daughter's greeting. What I have been able to accomplish for humanity I learned on my father's farm in Wisconsin."

Lady Henry said the fact that an English land-owner should be so heartily received in a gathering of American farmers was the best possible augury for the future. The world was beginning to learn there was something better than individual possession.

When she had finished speaking a gray-haired man arose and proposed that the audience rise as a tribute

of respect and good will to Frances Willard. With a rustle the hundreds in the crowded hall rose to their feet and stood in silence.

"This is the greeting," said President Bonney to Lady Henry, "that you are to take to Saint Frances," and the audience applauded.

Miss Jeanne Sarabji told the audience of the splendid physique of the women in the agricultural districts of India, and the vast amount of labor they were able to accomplish. A violin solo by Ludwig Marum followed.

Sunny Italy was represented by the Count and Countess di Brazza. The Count spoke of the present condition of agriculture in his native land and the prospects for the future, while the Countess talked of the lives of women in the rural districts, enlivening her description with personal reminiscences.

JOYS AND WOES OF A FARMER'S BOY.

Chief W. I. Buchandan said:—

"I have been much interested in what Chairman Allerton has said about farmers' boys and their trials. I think I am a past master in all the woes of a farmer's boy. I always got the short end of the hand-spike at a log-rolling, I was always put at the tail end of the threshing machine to put away the straw, and I have experienced the delights of tramping away hay in a suffocating mow, finding all the briars with my bare feet, and all the nails in the roof with my bare head. Books are so cheap now that the farmer's boy may become just as proficient as any boy in the city whose father has an income of \$100,000 a year. I have read myself to sleep for twenty-five years, and I want to say that I would not trade the outside education I picked up in the country for all the college lore you could pile before me. Let the farmers' boys spend their money for libraries."

Prof. Minami presented the greetings of Japan to the farmers of America. Dr. Bassilier spoke for France, Norasima Chorya for India, and H.M. Kiretch-jai for Turkey.

SECRETARY MORTON SPEAKS.

"During the late perturbations in the field of finance and commerce, the farmers of this country have suffered less than any other class. In their homes the Sheriff has appeared but seldom. Among their farms no processions of the unemployed have marched. All through these last six months the farmer has furnished fewer failures, less of protested paper, and least of want of all the employments of humanity in this great republic. Humanity generally, and the farmer particularly, has no enemy equal in efficiency for evil greater than ignorance, therefore each tiller of the soil should investigate for himself the various methods of cultivating lands, of producing good crops, and of securing remunerative markets. The one book which I can recommend to farmers for their perusal is Adam Smith's 'Wealth of Nations.'"

"I would also have, if possible, a daily newspaper from a great city at every fireside. The daily newspaper is an educator because it leads out into full view every morning all the markets of the world; it turns the light upon all the causes of fluctuating markets; it constantly illustrates the terse truthfulness of that great sentence in modern political economy: 'A market for products is products in market.' His present condition and his future is assuredly an enviable one compared with that of all other pursuits of the people. Society should let the distribution of property alone. The only proper function of government is the conservation of life, liberty, and property. The habit and the custom of conserving homes, in short, the love of home and land, is the basis of public tranquility, prosperity, and safety. Permanent homes for all the people, and as many of those homes in the country as possible, are the best instrumentalities for strengthening and perpetuating popular government. There must be a recession from city to rural life in the United States during the decade beginning with 1894; a readjustment, rather a reapportionment of population between city and country in the United States is demanded to insure the safety of the republic. Love of home is primary patriotism; no conspiracies, no anarchy, is evolved from the quiet homes in the country, and to them and the sincere love of them the friends of democratic government must look for the preservation and perpetuation of civil liberty in America."

The Ending of the Fair.

The greatest exposition the world has ever known is at an end. What it has been, what it has done, is thus, briefly stated by some of the men who have done so much to make it the grand success it was:—

WHAT CHICAGO DID.

The Exposition has been an exhibition of patriotism. It has been a marked exemplification of local patriotism growing out of a community whose object was to excel not any previous attempts of a neighboring community, but to rise above the accomplishments of the world. Former enterprises which have involved the expenditure of millions have not derived all their resources from an individual community. The enthusiasm and fidelity with which the citizens of Chicago as a whole supported the great enterprise are a more impressive phase of the growth and passing away of the Exposition.

When at the outset the citizens' movement was initiated, when it was determined to present to Congress the wishes of the people of Chicago to be charged with the prosecution of the World's Fair to a successful issue, no one could have predicted what the movement meant for Chicago, and how severely the city would be tested financially and otherwise to carry through the great undertaking. The local residents, imbued with the vigor and alert with the strength of the new community, did not doubt their ability to accomplish all that was promised when the city was chosen by the government as the location for the enterprise. But outside of the Chicagoan there were few who could appreciate their confidence. The

prediction was nearly universal that a great mistake had been made in the selection of the site.

When Congress had made its choice, it was then that the citizens, moved by unexampled pride in their city, resolved to make the occasion worthy of not only itself but the Nation. First came the call for money, and ten millions were shortly secured. The designers of the Exposition, moved by the same spirit of enthusiasm, did not halt with first conceptions, but elaborated daily until they had a scheme involving, as they supposed then to be the limit of expenditure, \$10,000,000.

As the image grew, the sacrifices followed. Citizens whose time could not be purchased, gave it. To a course of financial liberality, they added social entertainments on a magnificent scale, and all was done for the glorification of their city. After they had contributed millions of dollars and the Fair had opened, they designated a day as specially their own. Here again came the unexampled illustration of patriotism. Three quarters of a million of people constituted that day's assemblage, a number unequalled in any previous gathering.—*Geo. R. Davis.*

GREAT WORKS ACCOMPLISHED.

It has given birth to aspiration; stimulated hope; begotten charity; widened man's horizon; encouraged enterprise; minimized provincialism; and unified our people.

It has made selfishness repulsive; ignorance, a shame; lawlessness, indecent; generosity, a rule; co-operation, a virtue.

It has economized courage; crowned fortitude; adorned patience; made art a factor in our lives; promoted science; and ennobled religious thought.

It has lifted man to a higher plane, and made the whole world akin.

It has made virtue attractive, and vice repulsive; it has made man happier here, and surer of a happy hereafter.

It has silenced cavers; cheered the despairing; educated the emotions; blessed the poor and lowly; rebuked the arrogant; taught the rich; and been a harbinger of better things to the philanthropist.

It has abased the proud, and exalted the humble. There is not a virtue it has not quickened; not a vice it has not made ignoble.

It has been, in concrete, Greek art and philosophy, Roman heroism, and the Sermon on the Mount.—*T. W. Palmer.*

WILL LEAD TO BETTER ARCHITECTURE.

The intellectual reflex of the Exposition will be shown in a demand for better architecture, and designers will be obliged to abandon their incoherent originalities and study the ancient masters of building. There is shown so much of fine architecture here that people have seen and appreciated this. It will be unavailing hereafter to say that great classic forms are undesirable. The people have seen the vision before them here, and words cannot efface it. It is not surprising that such splendid examples of architecture should be found here.

I have believed for years that the conditions were present for art. There is intense activity, which results in an acute comprehensive condition of the intellect. It is due to the commercial activity and general vigor. Speed in intellectual progress has been greatly accelerated, and as soon as the results of such activity—wealth and leisure—obtained there begun to be a desire for art. Out of it all comes the flower, just as was true of Athens and the earlier Italian cities. I regard the Exposition as an expression of what is coming about here.

We are in the midst now of a great era of art. It comes quickly because of this intellectual activity. More progress is made in fifty years under the prevailing energy than could be accomplished in 300 years of time when the intellect was semi-dormant. It requires vigor and brightness to win here, and we have men of that character coming from all parts of the world. They are characterized by bravery and independence, and have the courage to break all ties of country and home. This in itself is an evidence of princely character.—*D. H. Burnham.*

A GRANDER EXPOSITION PREDICTED.

I predict that one of the possibilities—yes, probabilities—is that out of the taste planted in the minds of the ten per cent of the population immediately surrounding Chicago, who have visited the Exposition, and the added wealth and development, there will come in 1910 a demand from the then 50,000,000 of people within a radius of 500 miles of Chicago for an exposition which for magnitude and splendor will as far exceed the present Exposition as the then population and increased wealth exceeds that of today. There are now 25,000,000 people within the radius mentioned. It is reasonable to predict that this population will be doubled within the next twenty years. Chicago's population will also have been doubled and its wealth increased in proportion. While the Exposition just closed marks an epoch, it is not a gravestone; on the contrary, it stands out as a conspicuous evidence of the forces now operating in this country. We are in the beginning, not in the zenith of our attainments. The Exposition has been comprehensive, but not sufficiently so to represent all phases of the energy which made it possible. Underlying it is a growing reserve of commercial and intellectual force which has been merely indicated, not measured.—*H. N. Higginbotham.*

The paper mill at Salina has completed an important experiment to determine the practicability of manufacturing paper from wild sunflower stalks. Several tons of the weeds were made into paper which is declared far superior to straw paper, the fiber of the sunflower product being as tough and pliable as rag paper. The mill is now buying sunflowers, and proposes to make sunflower paper a specialty. This is the first experiment of the kind ever made anywhere. The daily *Republican* recently ran its entire edition on the sunflower paper.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Regent Street writes of safe return from Chicago, having enjoyed the trip very much.

J. J. Fryhofer, Second-year, was called to the funeral of his grandfather on Wednesday.

Superintendent Newman is at his post this week in oversight of construction on the new buildings.

W. H. Phipps, Third-year, took the civil service examination for Indian School Superintending at Topeka this week.

Miss Grace Casebeer, of Niles, Kansas, visited the College yesterday in company of her cousins, the Misses Romick.

E. R. Barker, First-year, was visited by his father yesterday, and went with him for a brief visit at his home in Kansas City.

Prof. Walters is engaged to deliver three lectures in a course planned by the High Schools of Osborne, Downs, and Cawker this winter.

Prof. and Mrs. Platt having returned from Oklahoma, Prof. Brown gives up the place on College Hill and moves into the James Ritchie house in the city.

Many students—chiefly ladies—take part in the "Trades Display" given by the young ladies of the M. E. Church at Wareham's Opera House, November 9th and 10th.

At the solicitation of the Labor Commissioner, Prof. Walters writes a historical sketch of the College for the Bureau of Labor to be published in the forth-coming biennial report.

The Department of Industrial Art and Designing has just received a number of samples of American marbles from the quarries of Maine, Connecticut, New York, Georgia, and Tennessee. They will serve well their purpose of illustration.

The Senior and Junior classes of the Junction City High School, accompanied by Supt. Kendrick and the Assistant High School Teacher, Miss Ada Fleming, visited the College on Thursday, and spent several hours in an interested inspection of departments.

The presidency of Rollin College, Florida, offered last spring to the President of this College has been accepted by Prof. C. G. Fairchild, of Cleveland, Ohio, who will enter upon the duties at once. Prof. Fairchild is a nephew of our President, and has had large experience as financial agent for Oberlin College and Berea College, where his father was President for twenty years.

Hon. Jerry Simpson was a visitor at the College on Friday morning in the company of Mr. J. N. Limbucker and Mr. J. Smallwood-of-Manhattan. In a brief talk to the students at chapel, Mr. Simpson urged them to make the most of their opportunities for education, referring pleasantly to his own lack of such opportunities, and emphasized the matter by assuring the young people that the responsibility for free and wholesome government will soon rest upon their shoulders.

The Second Division of the Fourth-year Class rendered the following program yesterday afternoon: "How the United States has disposed of Its Public Lands," E. A. Donaven; "Two Kinds of Cowards," Fannie Cress; "Success, and How to Attain It," Geo. Forsyth; "Women in Journalism," Lillie Dial; "The Relation of Poetry to Modern Life," E. L. Frowe; "Explanation and Comments on the Mind Cure," Blanche E. Hayes; "The Moral Evils of War," Walter Harling; "Evils of Free Railroad Passes," M. V. Hester.

Assistant Botanist Carleton reports that the meeting of the Kansas Academy of Science at Emporia last week was much better attended than was expected. The visiting members were pleasantly entertained by the Normal School people, who tendered their guests a reception and banquet Friday evening. Officers were elected for the ensuing year as follows: President, L. E. Sayre, Lawrence; First Vice President, I. D. Graham, Manhattan; Second Vice President, J. D. Hewitt, Emporia; Secretary, E. B. Knerr, Atchison; Treasurer, D. S. Kelley, Emporia. The next meeting will be held at Manhattan during the winter holidays of 1894.

Mrs. Breese was the victim of a distressing accident last (Friday) evening. Oil from an overturned lamp had spread, burning, over the floor, and in attempting to extinguish the flames Mrs. Breese's clothing caught fire. Picking up the blazing lamp to throw it out doors, she found the door locked, and by the time she succeeded in opening it and casting the lamp into the yard, the frightened woman was enveloped in flames, and ran, screaming, to the house of her neighbor, Mrs. Mayo, who, with great presence of mind, threw a rug about Mrs. Breese and smothered the fire. Dr. Ross, in dressing the wounds, found serious burns on the patient's side, with painful injuries of the arms, hands, and neck. Mrs. Breese probably owes her life to the woolen dress she wore, and to the further fact

that the lamp was brass instead of glass. Mrs. Breese's parents have been notified of the accident, and are expected on the evening train.

Many students have found it necessary to visit the President's office this week in connection with receipt of a brief printed notice enclosed in an envelope, reading, "Your grade in _____ is below seventy-six." To some this means simply a warning that more careful work is needed to prevent failure in classes; to others it means that harder tasks have been undertaken than they have ability to perform; to a few it means, "tried and found wanting." Care is taken to re-adjust studies, so far as possible, to the capacity of the student and his needs in the course. Any peculiar cause of failure is sought and, if possible, removed. Students are asked to make all difficulties known and understood, that they may be strengthened in their course.

The Weather for October.

Temperature.—The mean temperature for the month of October, 1893, was 55.41°, which is 1.06° above normal. There have been fifteen warmer and nineteen cooler Octobers in the past thirty-six years, the extremes being 60.93°, in '86, and 44.05°, in '69. The maximum, temperature was 95°, on the 8th; the minimum, 24°, on the 28th—a monthly range of 71°. The greatest range for one day was 51°, on the 30th; the least, 22°, on the 26th. The warmest day was the 10th, the mean being 77.75°; the coolest, the 28th, the mean being 33.50°. The mean of the observations at 7 A. M. was 45.81°; at 2 P. M., 71.58°; at 9 P. M., 52.13°. The mean of the maximums was 74.97°; of the minimums, 40.81°, the mean of these two being 57.89°. The first killing frost occurred on the morning of the 15th.

Barometer.—The mean pressure for the month was 28.84 inches, which is a little above normal. The maximum was 29.305 inches, at 7 A. M. on the 29th; the minimum was 28.435 inches, at 2 P. M. on the 5th—a monthly range of 0.87 inches.

Cloudiness.—There were two days two-thirds cloudy, five one-third cloudy, three one-sixth cloudy, and twenty-one clear. The per cent of cloudiness for the month was 11.

Rainfall.—The total rainfall for the month was .71 inch, which is 1.55 inches below normal. There have been but seven Octobers with less rainfall in thirty-six years. Rain fell in measurable quantities as follows: .05 inch on the 5th, and .66 inch on the night of the 11th.

Relative Humidity.—The relative humidity for the month was 76.83: at 7 A. M., 86.87; at 2 P. M., 59.97; at 9 P. M., 83.66.

Wind.—The wind was from the south twenty-two times, southwest eighteen times, northwest fifteen times, north nine times, east seven times, west five times, southeast and northeast twice each, and a calm thirteen times. The total run of wind was 8744 miles, giving a mean daily velocity of 282.06 miles, and a mean hourly velocity of 11.75 miles. The maximum daily velocity was 500 miles, on the 11th; the minimum, 108 miles, on 28th. The maximum hourly velocity was 32 miles, from 9 to 11 A. M. on the 23rd, and 12 P. M. to 1 A. M. on the 31st.

The following tables give a comparison with preceding Octobers:—

October.	Number of rains.	Rain in inches.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858.....	6	5.67	.....	56.38	92	30	.....	.....	.....
1859.....	2	.64	S	53.87	84	28	.....	.....	.....
1860.....	1	.42	SW	56.31	91	29	.....	.....	.....
1861.....	6	2.12	SW	55.67	84	32	.....	.....	.....
1862.....	4	1.62	S	58.98	94	16	.....	.....	.....
1863.....	3	2.40	NW	47.80	79	11	.....	.....	.....
1864.....	4	.68	NW	48.92	73	25	.....	.....	.....
1865.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1866.....	3	.43	S	57.53	88	30	.....	.....	.....
1867.....	5	.91	E	56.31	92	29	.....	.....	.....
1868.....	6	2.51	SW	52.43	79	32	.....	.....	.....
1869.....	2	.43	NW	44.05	79	19	28.88	29.20	28.50
1870.....	9	5.06	SE	56.05	78	30	.....	.....	.....
1871.....	6	1.20	SW	55.81	91	31	.....	.....	.....
1872.....	5	2.76	SW	54.98	91	27	.....	.....	.....
1873.....	2	.42	SW	51.23	84	14	28.77	29.10	28.32
1874.....	3	.22	SW	56.15	84	15	28.81	29.18	28.30
1875.....	3	1.04	SW	53.04	88	23	28.78	29.17	28.32
1876.....	3	1.61	SW	53.59	83	21	28.74	29.33	28.13
1877.....	8	9.07	SW	53.18	80	27	28.76	29.06	28.39
1878.....	4	1.06	SW	54.67	89	17	28.74	29.26	28.16
1879.....	4	2.63	S	60.84	86	24	28.70	29.17	28.40
1880.....	6	2.20	SW	52.10	81	23	28.69	28.98	28.21
1881.....	8	4.27	SW	56.54	88	32	28.65	28.96	28.07
1882.....	4	3.54	SW	57.71	83	32	28.62	28.92	28.10
1883.....	12	7.05	E	51.54	87	31	28.68	29.10	28.10
1884.....	6	2.22	S	60.06	83	33	28.57	28.88	28.34
1885.....	4	1.72	NW	50.62	85	20	28.61	28.87	28.37
1886.....	2	2.42	SW	60.93	91	25	29.00	29.46	28.49
1887.....	2	2.20	S	51.00	91	26	29.09	29.54	28.54
1888.....	4	2.74	SW	52.11	82	23	28.90	29.16	28.55
1889.....	3	1.42	E	52.21	96	26	29.12	29.40	28.76
1890.....	4	1.99	N	53.33	86	23	28.87	29.29	28.50
1891.....	4	2.45	SW	53.16	89	22	29.03	29.44	28.66
1892.....	4	1.32	S	55.67	93	23	28.90	29.21	28.55
1893.....	2	.71	S	55.41	95	24	28.84	29.31	28.44
Means.....	4	2.26	SW	54.35	86	25	28.81	29.19	28.38

WIND RECORD.

October.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889.....	4854	156.59	349	82	6.53	26
1890.....	7008	226.06	460	48	9.42	34
1891.....	6919	223.19	560	75	9.30	30
1892.....	7039	227.06	729	68	9.46	41
1893.....	8744	282.06	500	108	11.75	32
Means.....	6913	229.92	520	76	9.37	33

E. R. NICHOLS, Observer.

GRADUATES AND FORMER STUDENTS.

Geo. V. Johnson, '91, writes from Cedar Vale, Kan., where he is spending a short time with relatives.

U. G. Balderston, Second-year in 1889-90, is station agent for the Rock Island Railway Company at Keats.

Clara Ramsey, First-year in 1891-2, was a caller on Monday. She is at present studying music at Bethany College.

J. E. Thackrey, '93, leaves this week for a year's work as circuit preacher with headquarters at Hay Springs, Nebraska.

E. M. Paddleford, '89, writes from Baker University, where he is taking an extended course of study, inquiring for the Columbian history of the College.

G. L. Melton, '93, writes from Winfield, Kan., of pleasant work for the present in a loan and insurance office, with time for study of German and history with a view to a more extensive course in the future.

F. A. Waugh, '91, writes concerning his work in the Chair of Horticulture in Oklahoma Agricultural College, and adds that Mrs. Waugh (Mary Alice Vail, '92) and he are comfortably settled and enjoying life to the utmost.

F. J. Kimball, '87, has spent this week at home and with College friends while off duty as Railway Postal Clerk between Hastings, Neb., and Oberlin, Kans. He has been complimented recently by promotion to a salary of \$1000.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith. **Ionian Society.**—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Seeger; Critic, Jennie Smith; Marshal, Marie B. Senn; Board of Directors, W. H. Phipps, J. B. Norton, J. C. Christensen, Fannie Parkhison, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

October 28th.

The Hamiltons were called to order at 7.30 by Pres. W. O. Staver. Prayer by J. W. Holland. The program of the evening was opened by E. L. Smith with a declamation, "Anecdote of Daniel Webster." This was followed by a well written essay, "A Supposed Picnic," by A. H. Doig. Probably one of the most pleasing features of the program was a declamation delivered by A. P. Carnahan. Debate—Question, "Should drill be made compulsory in this College?" Argued affirmatively by E. Emrick and F. E. Smith; negatively by Geo. Doll and F. A. Dawley. Although the argument of the affirmative, which was strong, was thoroughly rebutted, the Judges, W. I. Joss, W. H. Painter, and J. D. Trumble, after considerable exercise of their active minds, decided in favor of the affirmative. The Society then had a real treat in "Recreation," the title of C. A. Johnston's oration. E. L. Frowe and H. G. Johnston gave us some fine music, the appreciation of which was shown by the hearty encore. After recess, C. D. Adams presented the Recorder, which was as interesting as usual. C. E. Pincomb gave a very interesting as well as instructive discussion on "The Sugar Bush." G. W. Whitson amused the Society with a select reading, "The Religious Card Player." F. Y.

October 26th.

The Alpha Beta Society was called to order, Pres. G. L. Christensen in the chair. J. B. Norton led in devotion. The initiation of Mr. Shellenbaum was followed by the reading of an excellent essay by R. W. Rader, descriptive of the English Sparrow, as known in the United States. The order of music, having been passed, was now returned to; and a quartet consisting of G. W. Fryhofer, Mr. Clothier, Elva Palmer, and Eva Philbrook, entertained the Society with the "Bio-land Song." The question, "Resolved, that the small attendance at the College is due to the Faculty's lack of sympathy toward the student," was affirmed by Messrs. Fryhofer and Swanson. A. C. Havens and Lucy Ward supported the negative. The affirmative claimed that the Faculty took comparatively no interest in religious associations of the College, no interest whatever in athletic sports and games, which, in other institutions, are made prominent by the Faculty's support and encouragement. This lack of sympathy must act as a repellent, causing many who would otherwise come here to go elsewhere. The negative said that from their personal experience and observation no lack of sympathy existed on the part of the Faculty; the lack of sympathy was on the part of the student. The causes for no larger attendance were numerous. The student wishing to

follow some walk of life other than the agricultural will, as a rule, seek the school which teaches what he desires to specialize; the general failure of crops has much to do with causing the small attendance this year. The Judges gave the negative their decision. Editor A. C. Peck read a very interesting number of the Gleaner—the production of the first Gleaner division. After recess, extemporaneous speaking, indulged in by all persons present, was full of life and vigor.

A. E. R.

October 28th.

The Webster Society was called to order at 7:30 sharply by our honorable President, Mr. Ames. Roll-call showed the attendance to be still increasing. Mr. Cutler led in devotion. Debate, question, "Resolved, that the United States should purchase a portion of Africa and put it under the Homestead law for the exclusive benefit of the Negro," was debated on the affirmative by J. B. Dorman and E. L. Brockway, and on the negative by G. M. Dick and S. Morse. Some of the points were as follows: The non-educational advantages given to the negroes, hence they were kept as slaves. The negroes of today are the same as they were just after the war. The negroes constitute one-fourth of the working class, so if they were removed it would give the white man more of a chance to support himself, whereas, if they were sent to Africa, they could establish schools and other institutions, and better themselves. The negative said it was the negroes' fault that they are so ignorant, and, also, that only one in ten will work. There are not enough ships afloat to transport them inside of ten years. Take Liberia, for example. It was settled by negroes from this country after the war, and now they are lower and more degraded than ever. The decision of the Society was in favor of the negative. The declamation given by Mr. G. C. Grisier, entitled "Onward, Onward," was very good and well committed. The essay by Mr. Amnell, answering the question, "Has the Columbian Exposition been fulfilled?" was also very good, and was highly appreciated by the Society. Music by G. W. Forsythe and N. J. Rhoades was enjoyed as was shown by the hearty encore they received. After ten minutes of recreation M. Wheeler had a select reading entitled "The New Justice of the Supreme Court." It was interesting as well as instructive. Vol. 24, No. 4, of the Reporter, edited by J. W. Evans, was, as usual, excellent in both reading and composition. As the Professor of Rhetoricals would say, you didn't have to work to hear him. The discussion given by F. R. Jolly showed the ins and outs of the well known game, to those who have been caught by it, known as the "Great American Shell-Game." Report of Critic at 10:20, and adjournment at 10:30 P. M.

W. A. C.

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recreation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost \$14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 43x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing store-room, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

There are 259 pupils enrolled in the Jewell City schools.

The Winter term of McPherson College will begin November 23rd.

The Kingman high school has fifty-nine pupils enrolled. The total enrollment in the city schools is 625.

The teachers of McPherson and vicinity have organized a local society for social and literary purposes.

The Commissioners of Russell County have decided to submit the county high school question to a vote of the tax-payers.

The Kansas *Christian Advocate* thinks it is wicked for the young men at Baker University who are to be preachers to belong to a foot ball team.

Washburn College does not do much at athletics this year, but she has a glee club well under way under the leadership of Prof. Woodworth.—*Mid-Continent*.

A police force has been organized among the students of the State University for the purpose of preserving order at the various athletic games and other student gatherings.

The annual session of the Kansas Academy of Science held at Emporia last week was not well attended from abroad. The next meeting will be held during the holidays of '94 at Manhattan.

Frank S. Westfall, a State Normal student, son of F. N. Westfall, of Howard, while making a rush in a foot ball game on the normal grounds, at Emporia, was thrown on his head and fatally injured.

The *Scientific American* says of Professor Dyche's exhibit at the Columbian Exposition: "It is the work of a man who is recognized by naturalists as the best taxidermist in the country, if not in the world."

The North Central Kansas Teachers' Association will meet at Concordia, Kans., Thanksgiving and the Friday and Saturday following. A splendid programme has been prepared, and will soon be ready for distribution.

The *Mid-Continent* reports that "The class of '95 at Baker University, thirty in number, marched in single file into chapel exercises recently, all wearing new class caps. The caps are blue in color and have bands of the color of orange." How silly!

An athlete at the State University runs to Haskell institute and back every morning before breakfast. The distance is nearly two miles. If he had a contract to carry the mail out there every morning, he would probably grumble at every step. Dasselbe ist nicht immer dasselbe.

County Superintendent Shirk has just completed his annual report to the State of Dickinson's schools for the year ending June 30, 1893. There are 125 school districts, with 66 male teachers and 91 female employed. The county's school population is 7,998; enrolled in school, 5,230; daily attendance, 3,351. The male teachers received last year in salaries \$20,929, an average of \$48.45; the female, \$24,674, an average of \$39.86.—*Topeka Capital*.

Of course hazing is wrong, and ought to be suppressed in all our institutions of learning. If the ordinary modes and limits of discipline are not sufficient, then the stern hand of the law should be called upon to put an end to it. It is often brutal and ruffianly, always silly, ungenerous, and cowardly. A dozen or twenty conceited and pompous sophomores will drag one poor, shivering freshman from his bed at midnight in the dead of winter, risk his life by exposure to cold and commit various indignities and insults upon him for no other offense than that of wearing headgear of wrong shape or color or carrying a cane. And this, by some subversion of their ordinary sense, they call manly, dignified, and proper. Yet, probably no one of those same dozen sophomores would dare stand up against that freshman in fair fight. They gain their courage, or rather show their cowardice, by their number.—*Exchange*.

The many labor-saving implements and machines now in use upon our farms have probably reduced somewhat the amount of muscular strength required on the farm, but it has not in any way reduced the amount of brains demanded in order to make a successful farmer. In fact, says a practical farmer, this is a growing age, and if you wish to equip your son well for his work you will give him every chance to obtain a good education. It is true education is not brains, but to teach one how to use the brain with which nature has equipped him is certainly a good work. Try the Agricultural College, and see if it does not help your boy toward becoming a better farmer than you are.—*Baltimore Sun*.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

D. R. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

D. R. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

LAUNDRY.

WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first-class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday (noon train), returned each Friday in time for social and society meetings. Express office will be open Monday, Friday, and Saturday until 8:30 P. M. D. W. March, Agt.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

ALLINGHAM'S MARKET is a good place to buy meats, poultry, and fish. Remember the place when you go down town.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, South Second Street.

BARBER SHOP.—Stop in and try Whittington's barber shop. The first on your way down town. I defy competition on pompadours. All work equally first class.

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THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.
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The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

THE RELATION OF TECHNICAL TO GENERAL COURSES OF STUDY.

BY PRES. GEO. T. FAIRCHILD.

THE methods of training for active life have varied from time to time, with the ideas of the leaders among educators. The swinging pendulum of thought is found everywhere; and perhaps is nowhere more evident than in the effort to train to most usefulness in the least possible time.

The trend of earnest effort at all times toward special training is natural, for several reasons. It saves time in gaining a living. The specialist can pay his way from the start. Further, it makes haste towards usefulness. One who saying, "This one thing I do," can do the least of useful things, seems doing well, and fills a niche in somebody's plans.

The great advance in division of labor everywhere reveals the fact that such division is profitable, both to the actor and to the world for which he acts. The whole trend of civilization indicates that a little done repeatedly brings perfection in that little. And the whole mechanism of production and exchange trends toward economy in the little perfections. To seek some niche to fill, and fill it well, as speedily as possible, is the end which every youth has set before him in the practical lessons of life.

Moreover, the bulk of human knowledge, in our day, overwhelms the thoughtful youth, and compels him at once to acknowledge the hopelessness of universal information. To expect, like Milton or Bacon, to compass all of science, in one's education, would be simply preposterous. A mere glance at elementary facts reveals the uselessness of such attempts. Even when one is exhorted to broaden his view of the world, by extending his search into the grand humanities, the question instantly arises, "Which humanities?" For every field of study calls for whole libraries, and for almost numberless laboratories, with the ever-present suggestions of more to follow. Thus the necessity for choice of culture is as evident now to the mere tryo in knowledge as it once was to the philosopher. Indeed, the very general discipline of our youthful days, through Roman classics and Greek poetry, has now become a special training. And that which opened to the view of us elder thinkers a world and a history, must now present to our children only the details of a few lives, or must occupy a lifetime in searching for the ever-wavering influence of such thoughts in the world.

We must expect, then, the absolute necessity of special thought and special training for all who would maintain their part in this world of active thought. And yet the dangers from attention to a single field of thought are the same now as ever. These dangers are both individual and social. To an individual mind occupied with a study of facts, however numerous those facts, the view of nature becomes narrow; occupied with few relations, the indefinite details in those relations seem a universe, yes, even the universe; and other minds are read by the same little signs. The growth of reasoning power is thus limited almost to a mere empiricism. The association of fact with fact in a single rut of thinking makes this one rut in the laws of nature paramount among relations. Almost no estimate of truth is genuine, for such a mind, held within its narrow confines, so magnifies the nearer objects as to obscure their relation to the rest of nature. Such a view of our universe and its ever-increasing activity becomes shortsighted. Repetition after repetition of the same set of facts seems to make up both time and eternity. And instead of growth and expansion to meet the opening vistas of infinity, the confine of the well-worn path occupies all energies. With such habitual views, an overweening conceit is most natural and most frequently realized. Nothing so fully sets a man above his fellows, in his own opinion, as excessive familiarity with a few particulars indefinitely applied.

The fact that such an individual often finds himself out of sympathy with his neighbors, misunderstanding them and misunderstood by them, too often only exalts his opinion of himself, and makes even more exaggerated the tendency to narrowness, unreasonableness, unfairness, discouragement, and self-conceit.

Such a result leads, naturally, to conflict in the social life of individuals. All mutual understanding between two persons implies, of course, a common-place of thought. Two extreme specialists, in different lines, have no such common-place, lack appreciation of each other's personalities, and must fall back upon the simplest talk of weather and crops.

A lack of common wants brings partisanship; and argument, for lack of common-place and clearness of reasoning, becomes bickering and vituperation. Misrepresentation is inevitable, both as to abilities and needs; and too often the social world is all awry to the several eyes mistrained in observation of a single class of facts.

The world is full of examples. City and country vie with each other in furnishing expert instances; and the ignorance that is hardest to combat is the self-conscious knowledge of a narrow-minded, routine worker, with a single range of thought. These real dangers it is the part of true education to meet and destroy. No student of educational methods can be willing to be restricted to the laws of the one object of study he selects. His problem is to find a remedy for every evil tendency, and yet lose none of the trend of nature in the growth of humanity toward its perfection of accomplishment.

The remedy of our earlier days for the narrowing tendency of technical training was to divide all growth between two periods—one of discipline, in which the range of knowledge is the mere gymnastic field for youthful energy of mind, and the other of training in the chosen profession through an application of the wider range of particulars implied in discipline. This assigned all technical courses to a university where, by assumption, only disciplined minds were gathered. The long preliminary course of purely general knowledge was followed by a brief training in technical application. And yet the whole was far too slow in perfecting the work of the best minds, and wholly inadequate in adaptation to growth from mediocrity into superiority. Too often the ardent earnestness of youth for accomplishment was wholly quenched, and multitudes became mere time-servers in vain speculation about the universe, while knowing nothing of the details of life and learning. The exhortation, not uncommon, to await developed powers before selecting applications for such powers, was quite like the ludicrous maxim, "Never go near the water till you have learned to swim." The actual swimmers in our earlier days in the seas of actual life were chiefly those whose necessities compelled daily application of ingenuity in details, as a means of accomplishing discipline of mind in the general course of study.

The later remedy, and the better, for extremes in specialization, employs a unity of ideas, both special and general, concrete for the abstract and abstract for the concrete, embracing, if possible, all activities at once. This must recognize all knowledge sought in relation both to self and to humanity. "Truth for its own sake" means, in this connection, truth for its importance in the range of possibilities. Each step in advance is made upon the foundation laid in past activity. And yet the broader views of older students, or of teachers, are the constant stimulus to greater activity. All knowledge has its meaning with reference to some line of active expression; and that expression is its meaning in relation to all humanity. This implies that each student shall find, by natural contact with the things about him, the line of ingenuity which shall make him most useful to his fellow men. Instead of regarding his trade or his profession as simply a means of living, he naturally finds it a means of giving a larger life to his fellow men. Philanthropy is from the start a stimulus to exertion, because the active energy is made to illustrate the united interests of society, a nation, or a world. With proper teaching, the ingenious youth is led to find a blending of all sorts of relations through a great variety of studies adjusted here, there and everywhere to his particular energy, and may grow continuously in breadth and in power. His world is an unlimited world, though self-centered, and he quickly outgrows the conceit of superior ability by finding almost everywhere his need of equally important abilities in his neighbors.

I believe that the practical methods of training of our day may accomplish a truer growth than the extended courses of the past; but they must seek to do more than simply to perfect in dexterity, and foster the special ingenuity of students. It is possible, in a course of four or five years from the common schools to embrace the essentials of a good education. It will lead to the arts of life, and bring actual results, but will, at the same time, give those liberal views of human nature in the midst of outer nature which insure freedom of thought, clear-headedness, and practical wisdom. I would have such a course embrace the common-places of knowledge, with actual

service, at each step in the common life of humanity.

To furnish the common-places, I would be sure, first, of accurate speech; and that because humanity needs it, and each needs it to understand humanity. Second, such a system of reckoning as will cover all possible problems, but illustrated continually by the every-day problems of training. Third, systems of reasoning, inductive and deductive, not simply illustrated, but used in every phase of duty and accomplishment. Fourth, as complete an analysis of the universe as elementary statements and questionings can bring. Mathematically, the student should, as a friend of mine expresses it, see into space. Mechanically, he should test matter by all the senses and with many contrivances for producing and estimating mass and motion. Physically, he should experience force, and comprehend conservation of energy at every turn. Chemically, he should experience order in the lines of his daily thought. The precision of manipulation should give him accurate conception of the universal law of atomic order. Organically, the world should touch him by enough of the animal and the vegetable kingdoms in every-day surroundings to reveal the laws of growth, structure, and function in infinite variety. Intellectually, he should find himself the representative of all past experience, still reaching after a richer experience and to a fuller comprehension of the universe. Morally, he should find duty chief, and rights a consequence of rational effort to be of all possible use to fellow beings. This analysis does not require the history of thought about such problems, the pros and cons of controversy, or the quibbles of detail and description; but it requires ingenious application of the actual facts of daily life.

I would add, as full an acquaintance with the world's experience—industrial, literary, and political—as will add to rather than detract from the interest in every day's experience. The very elements of knowledge embraced in the general range of the sciences can furnish suggestive materials, and well-stored libraries, with careful direction on the part of teachers, will arouse curiosity, and incite to constant research.

All these common-places of knowledge may find their application in the so-called common life of humanity. The food supply, the shelter, and the mechanism of art touch every man's being, and afford no end of illustrations of the growth of knowledge and the power in wisdom. See to it that students have to do, by actual exertion, such part of the world's tasks as concern most of the race. In this daily adjustment of tasks they may find that knowledge is not a garment worn for show, but their weapon of warfare against want, against weakness, against brutishness, or their means for climbing to the summit of enjoyment. Technical ingenuity, thus developed gradually among general ideas of usefulness in purpose, is not narrowing, but broadening, liberalising, while it opens the way to perfection in the arts of life. It gives a real choice among pursuits that add to the welfare of the race, with less chance for bias from mere whim or curiosity. It builds power and character together.

Now, a word as to details; and for these I can do no better than to outline in brief the plan pursued for the past dozen years at the Kansas State Agricultural College. An itemized statement of principles may suffice.

- (1) Admit directly from the common country schools and if possible without a preparatory class. A college for the people must go to the people in its plans.
- (2) Give as early as possible, with English and mathematics, an introduction to nature through drawing and botany, with mechanical training in simple construction applicable to every kind of life.
- (3) With chemistry and mineralogy apply science in agriculture, horticulture, economic entomology, and household economy, with practice in all.
- (4) With mathematical mechanics, agricultural chemistry, and physics, give a training in surveying—the basis for our title to our homes—and common engineering, suitable to all sorts of construction, exercising ingenuity in the same problems upon the farm and gardens, and in the shops for wood and iron work.
- (5) Enlarge the scope by more general problems in thinking and reasoning, illustrated still by everyday facts in plant life, animal life, geology, and history and social economy, with technical trial in the arts of construction and production.
- (6) Keep students thinking all along the line of the industries which employ the race and give our civilization.
- (7) Make the faculty a unit in their sympathy with the purpose and methods of the college in training for the various pursuits of life.
- (8) Interest the body of students in the object sought,

and arouse a pride in their own institution as a foster mother in the useful arts, showing results worthy the praise of the people.

(9) Bring the college work to the people by institutes, by lectures, and by every means of direct contact between faculty and patrons, with especial care to bring to the front, in interest and useful effort, the graduates and former students whose good work and growth are proof of accomplishment of the grand purpose of the college.

(10) Cultivate the interest of absent alumni in the growth and advancement of their alma mater.—*Address before the Association of Agricultural Colleges and Experiment Stations at New Orleans.*

TEXAS FEVER.

BY PROF. N. S. MAYO, D. V. S.

THERE has recently been published by the Bureau of Animal Industry of the United States Department of Agriculture the results of their investigations of Texas fever. It has been demonstrated that Texas fever among cattle is caused by a microscopic animal parasite which lives in and destroys the red blood corpuscles of cattle. In many respects it resembles the common disease germs, but it belongs to the animal kingdom, while germs or bacteria belong to the vegetable kingdom.

Another peculiarity of Texas fever is that Texas cattle do not seem to suffer from the disease, but apparently healthy Texas or Southern cattle infect pastures so that Northern cattle will contract the disease from crossing or feeding upon these pastures, even though the Texas cattle have been removed.

It has been positively determined that the southern cattle tick (*Boophilus Bovis*), a very large reddish brown tick, nearly as large as the end of one's finger, is capable of transmitting Texas fever from Southern to susceptible Northern cattle.

When these ticks reach the adult stage they drop from the animal to the ground, lay a large number of eggs in a somewhat sheltered spot, and die. When the young ticks hatch, they crawl upon any cattle which may be about, and if the cattle are susceptible the ticks will communicate Texas fever to them. In the latter part of the summer Dr. Francis of the Texas Experiment Station sent to this Station eggs of the southern cattle tick. These were hatched, and the young ticks placed upon two three-months old calves, but the calves did not contract the disease. Later other young ticks hatched in the same manner were placed upon a four-year-old heifer, which contracted Texas fever and died. This experiment is corroborated by the work of the Bureau of Animal Industry and also by Dr. Dinwiddie of the Arkansas Experiment Station. Hence the old theory that southern cattle ticks carry the infection of Texas fever has been proved to be a truth beyond the possibility of a doubt. It is no longer a theory, but a positive fact. Another interesting part of this experiment was the fact that the two calves did not take the disease in a definite form, though they probably suffered from a very slight attack, as rise in temperature might indicate.

It is generally known that young calves are not susceptible to Texas fever, at least in a marked form, and this may solve the question why Southern cattle do not have Texas fever. It seems probable that Southern calves when very young are attacked by the ticks and have a mild attack of Texas fever which renders them immune against future attacks of the disease. It is certain, however, that the parasite of this disease still remains in the blood in limited numbers, so that ticks from these cattle will give the germs of the disease to other susceptible cattle.

It is hoped arrangements may be made that the two calves which did not contract the disease in a noticeable form can be tested thoroughly to see if they possess immunity to Texas fever.

It now seems probable that many of the mysterious phenomena associated with Texas fever will be cleared up through the efforts of the Bureau of Animal Industry and the Experiment Stations.

Vandalism at Ann Arbor.

The performances of the 2,000 students of Ann Arbor on Halloween were a disgrace to that institution. Innocent mischief among students can be pardoned at any time, but mischief which involves the destruction of private and public property, the smashing of cars, the burning of fences, and tearing up of sidewalks can have no excuse. The students of Ann Arbor degraded themselves to the level of the hoodlums of Chicago, whose performances on the same evening were a disgrace to the police authorities of the city. Boys will be boys, but there is no good reason why boys should be rowdies and rioters. The vandals who were captured by the authorities of Ann Arbor deserve to be punished to the full extent of the law. No tradition or usage of college life justifies a student in trespassing upon the rights of people or conducting himself publicly in a disgraceful and disorderly manner.—*Chicago Tribune.*

FARM NOTES FROM VARIOUS SOURCES.

Each farm is a sign-board calling attention to the stock of ideas the farmer keeps in his mental store-room.—*The Cultivator.*

The shadow of a barb wire fence gets longer as winter approaches, but it never gets long enough to shelter a cow.—*The Cultivator.*

Making a specialty of any one thing on the farm is only when a man knows his own capabilities and is sure of a market for all he can produce.—*Farmers' Home.*

If inventive genius will now turn its attention to planning our barns for easy, quick, convenient, and roomy storage, it will still further benefit the farmer.—*Farmers' Review.*

A good place to do book farming is around the fire-side in the winter evenings. Take up the study of certain crops and learn all that you can about them, and be prepared to put the knowledge into practice next spring.—*Farmers' Home.*

The object of the general farmer should be to produce as far as possible everything that his family and his live stock will use, and have a surplus of those products that can be most readily marketed, and yet will draw least upon the fertility.—*Farmers' Home.*

There are thousands of farms in America that would be cleaner and the richer for a small flock of sheep; and if they be of good sort and are properly cared for, they would turn in a good profit from their triple yield of wool, lambs, and mutton.—*Mirror and Farmer.*

Farm management is a matter of far more concern than the crop in hand. All who do not take a wider view than that will shortly regret it. When planning for the year's crop consider what its effect will be on the land, keeping its fertility constantly in view.—*Baltimore Sun.*

There is a social side to the road question which affects the farmers more than any one else. Bad roads make visiting impossible among those who live in the country, and this causes the young people to become discontented with country life, and makes them long for the towns and cities, where they can have a better chance at seeing other people.—*Farmer's Home.*

Never use a grade animal for breeding, however good its appearance may be. Whatever of merit, style, or quality he may have comes to him from some thoroughbred ancestor, but he has no power to transmit his fine qualities to his progeny to any degree worth figuring on. The improvement has ended with himself. The grade is bound to breed your herd down instead of up, and there is no profit that way.—*Farmers' Home.*

A farm should be thoroughly and systematically drained. It makes no difference if it is not level, it needs the drains, and it should be done systematically as the sewers and surface drainage of a city. The farm that has been so treated will give the best results, and will not be so subjected to either wet or dry weather; indeed, the former will often bring the heaviest crops, when land in its natural state would produce nothing.—*Colman's Rural World.*

The development of practical information about farming is going on rapidly, both in farms and at experiment stations. The classification and discussion of this information during winter months in farmers' gatherings of every kind will be found profitable, and should by no means be neglected. The election is now a thing of the past, and it will be many months before the personal interests of candidates need again become a disturbing element, so that neighbors can now meet and consider the elements of their material and intellectual advancement without great danger of the obtrusion of political discussions on their attention or in any way compromising their views, even though Republicans, Populists, and Democrats be on the same program.—*Kansas Farmer.*

The season of farmers' institutes will soon be here, and it is not necessary to remind those who have taken part in these gatherings heretofore, that they are of great advantage to all who attend, and especially to those who participate in the proceedings. The personal advantage gained from a study of one's own experience in any line of his vocation is not the least of the profits of preparing an institute address. If this address is reduced to writing and carefully reviewed, revised, and corrected, even at the expense of several times rewriting, the definite determination of only half known or crudely developed facts which ensues in every case surprises the writer of such a paper and makes him richer in knowledge because his experiences have been questioned for their real results and definite meaning.—*Kansas Farmer.*

Cleaning up the farm in the beginning of October is part of the work which is carefully looked after by the enterprising farmer. The weeds, briars, and underbrush that have taken possession of his farm while he was busy with the crops need attention now. The grubbing hoe and the brush scythe should be brought out now and sharpened up. One field should be taken at a time and thoroughly renovated. The changed appearance of a fence row when handled properly by a renovating squad will be enough to enthrall even the laziest man into renewed action and make him sigh for new fences to conquer. It will take but a short time to go over an ordinary sized farm with a general revolution and clearing up, and pay for such work will be found in the improved appearance of things. A few thorough cleanings will rid the place of many obnoxious weeds and briars, and each year the work will grow easier. Instead of driving the boys away from the farm, such work, if rightly managed, will bind them closer to it.—*Farmers' Review.*

Calendar.

1893-94.
 Fall Term—September 14th to December 22nd.
 Winter Term—January 9th to March 30th.
 Spring Term—April 2nd to June 13th.
 June 13th, Commencement.
 1894-95.
 Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Six new students have arrived this week to swell the ranks.

Mrs. Breese, so badly burned a week ago, is slowly improving.

The special session of the Webster Society will be held on the 18th.

Ida Dougherty drops out of classes on account of sickness for two weeks past.

Mr. and Mrs. Kirkpatrick, of Fredonia, visited their sons in College on Wednesday and Friday.

Mrs. E. W. Howe, of Fredonia, spent a few days this week with her son, a First-year student.

November 30th has been set apart for Thanksgiving Day, and as usual there will be no College exercises.

Miss Rupp read a paper, "The Craving for Fiction," before the Domestic Science Club at its last meeting.

Regent Secrest of Randolph was a visitor at the College yesterday, and a listener at the lecture last evening.

Ben and Carl Hood celebrated their birth-days—both of which occur the same week—by a party on Saturday last.

The dry weather is still with us, and but for the clouds of dust which rise on the least provocation would be highly enjoyable.

Regent Wheeler, Treasurer of the College, was here on Thursday and Friday to attend to the condition of College accounts in his charge.

Prof. Hood writes from Chicago that he has to wait his turn at the storage warehouse for cases in which to pack the College exhibits for shipment home.

The College team and a picked eleven of other students played a game of foot ball in the City Park yesterday afternoon, resulting in a score of 19 to 0 in favor of the former.

Judge Thatcher made the tour of grounds and buildings yesterday with great interest. He had not visited the institution for many years, and was much pleased with its development.

The iron for the Library building, so long delayed, is arriving and being placed in position. The fine weather is favorable to work, and is being improved to the utmost by the workmen on both buildings.

Both graduates and students took prominent part in the Musicale at the Presbyterian Church on Tuesday evening and the Trades Display by the young ladies of the M. E. Church at the Opera House on Thursday and Friday evenings.

The College Orchestra is organized with the following members: D. C. Arnold, R. H. Brown, W. E. Bryan, L. Clemons, C. Dolby, E. L. Frowe, R. Helder, L. B. Jackson, H. G. Johnson, G. B. Norris, W. J. Rhoades, G. Secrest, H. Walters.

The Committee on Farmers' Institutes has received a number of applications for aid in meetings to be held during the winter months. The College will be represented in these gatherings of farmers so far as possible, and friends who desire its aid should make application early.

The item of last week concerning Pres. C. G. Fairchild's call to the presidency of Rollins College, Winter Park, Florida, mentioned Cleveland, O., as his former residence. How the printer and the proof-reader made Cleveland out of a very plain Oberlin is one of the unsolved mysteries. Pres. Fairchild has been professor and financial agent of Oberlin College for the past ten years.

The College Cadet Band numbers twenty-two members, as follows: H. B. Brown, H. F. Barber, A. B. Carnahan, F. A. Dawley, F. B. Dodds, G. C. Grieser, A. F. Gildemister, E. C. Joss, W. I. Joss, H. G. Johnson, A. F. Mangelsdorf, O. E. Noble, G. B. Norris, L. W. Pursel, A. L. Peter, S. H. Robbins, W. J. Rhodes, H. M. Sharp, W. O. Strahl, O. R. Wakefield, S. M. Hanlon, A. E. Yeager.

"The Credit System: its uses and dangers in exchange," was the title of the lecture given last evening in the College Chapel by Judge S. O. Thatcher of Lawrence. The theme was carefully treated in its many bearings upon the commercial prosperity of the world. The historical development of the system, its relation to laws for collection of debts, its tendencies toward loading communities (especially newly settled ones) with burdensome debt, its place as a substitute for money, and various devices for extending its range, were all explained and fairly criticized. The Judge concluded that with the present promise of direct communication by electrical connection throughout the commercial world, we may

expect to realize a more wonderful development of a credit system than even the rapid advance of the past twenty years would suggest. No mere paragraph can suggest the full extent of the lecture, to which an audience of two hundred gave strictest attention for more than an hour.

The Friday afternoon exercises were opened by an orchestra selection, which was excellently rendered. The literary exercises, by a division of the Third-year Class, followed. "Should Art Attempt to Teach Morality?" A. E. Ridenour; "Growth," Maude E. Kennett; "Pyramids," W. H. Painter; "Cruel Silence," Laura McKeen; "The Fate of a Reformer," M. A. Limbocker; "The Problem of Creation," Elva Palmer; "The Art of Conversation," Marion Jones; "The Old Garret," O. H. Halstead; "Reading for a Young Lady," Susan Johnson; "Centennial Address by Albertson," C. V. Holsinger.

A correspondent of the *Courier* published at Brisbane, Queensland, says of the work of Prof. E. M. Shelton, the former Professor of Agriculture at this College, now the official advisor of the Ministry of Agriculture at that place: "Professor Shelton is doing noble work for the wheat-growing industry, and it would be well if our farmers generally would give an intelligent consideration to his teachings for the best of reasons: he is a man who knows what he is talking about. I had the pleasure of seeing this gentleman unaided put in 170 varieties of wheat, the greater number having high class milling qualities. If we are to become an important and successful wheat-growing country, we must cultivate a class of wheat which will take a high place in the market of the world, as our sister colonies have done. I am confident it can be done, but not with low-grade wheat."

GRADUATES AND FORMER STUDENTS.

Alice Hood, Second-year in 1891-2, was a visitor on Friday.

J. Sutton, Second-year in 1890-1, visited College this week.

F. Hulse, '93, is employed for the year on the College Farm.

Emma Stump, Second-year in 1892-3, visited Chapel Friday afternoon.

Bertha H. Bacheller, '88, is Assistant Principal of the High School at Lyons, Kan.

C. S. Criswell, Third-year in 1892-3, has just recovered from a dangerous attack of diphtheria.

R. E. McDowell, Third-year in 1888-9, wore the uniform of a Columbian Guard for a month.

P. M. Kokanour, Third-year in 1884-5, welcomed a new daughter to his home in Jennings, La., October 1st.

C. H. McCord, Second-year in 1891-2, has gone to Lake Worth, Florida, to spend the winter on account of throat trouble.

J. H. Criswell, '89, is at home after a month's experience as Columbian Guard at the Exposition. He visited College Friday.

J. C. Maltby, student in 1874, provided at his death that his fine library should go to the public schools of Minneapolis, Kansas.

A. D. Rice, '92, has been obliged to leave his school this week on account of illness, and Ada Rice, Third-year, has taken his place.

Kate Pierce, Third-year in 1892-3, who has been teaching in Winfield, Iowa, is chosen Principal of the Wayland (Iowa) Schools.

D. G. Fairchild, '83, sailed on Saturday, November 4th, by the Steamer Fulda for Europe, where he hopes to spend several years in special botanical study. His first place of residence will be Naples.

G. W. Wildin, '92, served for almost two months as Columbian Guard at the Fair, and expects to be employed on the grounds in clerical work during the winter. He hopes to return to the Santa Fe shops in Topeka next spring.

H. E. Moore ['91], an old college chum of Ben Skinner's ['91], came in on his wheel the early part of the week to make Ben a few days visit. His home is in Topeka, but he came from Eastern Missouri on his wheel.—*Fairview Courier*.

S. I. Wilkin, Third-year in 1892, writes from Bow Creek, Kansas, of a poor year for crops, leaving "practically nothing but fodder." He has drilled in 200 acres of wheat, which is up and looks well. Four inches of rain early in October has put it beyond danger of dry weather this fall.

G. E. Stoker, '90, having completed a two-years course at Harvard last June, jumped to the other side of the continent, and is now reading and doing practical work with the law firm of Dorn & Dorn in San Francisco. He thinks the Mid-winter Fair, soon to be ready, will lead to a considerable business revival in California.

Ben Skinner, '91, writes that he has but nine class letters, and that the publication of a volume as planned is impossible. Those who wrote are Gertrude Coburn, Tina L. Coburn, K. C. Davis, Mayme Houghton, Nellie McDonald, J. O. Morse, Hattie M. Noyes, S. S. Van Blarcom, and F. A. Waugh, whose letters Skinner ought to enroll in bright red ink and enclose in a frame.

Lottie J. Short, '91, writes of busy days in the Storrs' School of Agriculture. Sixteen girls have entered the new department of Domestic Science and are doing good work. Miss Short finds new and enjoyable sights in the hills and woods of New Eng-

land, and occasionally sees the ocean and even Boston. She finds College work much like that at home, and College life busy, happy and progressive wherever she finds herself.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith.
Ionian Society.—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

November 3rd.

The Ionian Society was called to order by Vice President Swingle, and opened with congregational singing, followed by prayer by Miss Wilkin. In the absence of the Critic, Miss Hayes was appointed for the session. The general topic of the program was James Whitcomb Riley, and was opened by a declamation by Olive Wilson, a selection from his poems. Vocal solo by Louise Spohr, Miss Wilson, accompanist. Following this, Miss McKeen read a selection from Riley. Miss Louise Spohr read a story. A vocal duet was rendered by Misses McKeen and Oldham. An interesting issue of the "Oracle" was presented by Hortensia Harmon, which had for its motto, "When God sorts out the weather and sends rain, why rain's our choice."—(Riley). Miss Mary Wilkin read an essay on Riley, which showed careful preparation. I. E. R.

October 4th.

The Webster Society was called to order by President Ames. As usual, a large number were present to answer to their names. Mr. McCauley led in devotion. Messrs. Savage, Dill, and Wiley were elected members of the Society, after which the programme of the evening was opened by a debate. Affirmative, Patten and Haney; negative, Creager and H. N. Rhoades. Question, "Resolved, that naturalness has more to do with the powers of the orator than excessive knowledge." It was a very interesting and well prepared debate by both sides. One of the many points brought forth was that Jerry Simpson didn't have an excess of knowledge, as he showed in Chapel, and therefore excessive knowledge is not necessary for an orator. The decision of the Society was in favor of the affirmative. Mr. Van Orsdol's declamation entitled, "Is it anybody's business?" was very good. The essay by Mr. Lovett, describing a masquerade ball, was also good and quite laughable. Mr. Bishoff's essay on "The Sparrow" was "short and sweet and hard to beat." Messrs. Hayes, Cutler, and Cavanaugh furnished the Society with some music. Mr. Farwell's select reading on Bill Nye's defence of Shakespeare was very interesting indeed. Mr. M. Kirkpatrick furnished the news of the past week. W. B. Chase's discussion on invention and discovery of the steam engine was very good. W. A. C.

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.
2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.
3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.
4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Practical Knowledge with Theoretical.

This is pre-eminently a theoretical age, and theoretical instruction is being imparted to a greater extent than ever before; so much so as to become noticeable even in the remote sections of the world. A paper published at Melbourne, Australia, says: "Though we may not equal the British as regards teaching horticulture to the young, we give practical instruction in combination with lectures on the principles and science of the business." The writer says further: "In Britain the bulk of the teaching is simply technical without the practical."

May not the same be said to a great extent with regard to the United States. By means of lectures an effort is made to give instruction and to interest in all these matters that are connected with farming operations; but being given from the platform, the instruction must be of a purely theoretical nature. The Australian writer is correct when he states that but little real benefit comes from mere teaching by technical lectures without practical experience, and this being so, a great amount of really good teaching is being wasted.

There is very much of valuable technical teaching that fails in the good it ought to accomplish because it is not accompanied by practice in the same line as the teaching.

Purely agricultural colleges that fail in this are deficient in a most important matter; the theoretical part must be illustrated practically in order that the principle involved may be clearly understood by the pupil.

Take the profession of civil engineering: give a student the best theoretical instruction that can be imparted in the class room; and then set him in the field, place the necessary instruments in his hands, and direct him to locate a railroad through a broken country, and he will make a complete failure.

The same is true with regard to agriculture in the case of boys or men who have had no practical experience upon the farm. Teach them, for instance, all the theoretical principles involved in plowing, and then tell them to go out and hitch up the team and go to the field, for the purpose of plowing, and the chances are that they would never reach the field, to say nothing of being able to plow after getting there, and yet the boy of the farm who has enjoyed the advantages that come from practice, while he may not understand all the theoretical points, will, when directed, take his team and plow the soil in a skillful manner.

Agricultural colleges, then, have two classes to provide for: those who are well acquainted with farm operations and need instruction in the purely theoretical part of farming, and those who not only require theoretical instruction, but an application in practice. Of course, there are many matters connected with agricultural pursuits that even the boys of the farm are ignorant of, both in theory and practice, and it is upon these points that they should combine theory and practice; and no agricultural college should be considered to be fully equipped for instruction unless it can impart practical instruction.

The more practical men—those who are keen observers and eager learners—we have upon our farms and in our gardens the higher will the standard of agriculture be raised and the more certain will be the supply of scientific students, experimenters, and explorers in the field of agriculture.—*Wm. H. Yeamans, in Farm and Fireside.*

Converted to Agriculture.

When quite a small boy I had great desire to become a preacher, says a Michigan farmer. I used to hold meetings in a large, hollow stump, with my little playmates for hearers. After the close of meeting one day, an old aunt, who was listening, said it was announced, "There will be a meeting next Monday, as sure as the devil stands on his feet." Then I wanted to be a school teacher; and began at the age of 16. But father wanted me to be a farmer, so he gave me all the grass seed I could cut and save from the corners of fences, and from the threshed grain; gave me a small plot of ground in the garden on which to raise anything I pleased; gave me a colt and pair of calves to train. He never gave me a dollar to spend in my own way, but allowed me to have all the proceeds of my labor. Thus I became interested in farming and gardening; abandoned preaching theoretically, but have tried all my life to preach from texts drawn from practical experience; and now, at a little over three score and ten, a paralytic, I still take great delight in all rural occupations, or seeing them go on. To keep children at home on the farm, give them the use of small plots of ground to be tilled themselves, and give them the entire products thereof, be it grain, vegetables, seed or flowers; give them a colt or a calf, pig or lamb, one or two domestic fowls; let them have entire control, and the proceeds for it; there will be fewer discontents on the old farm, and a better class of practical farmers, and gardeners, and housekeepers.—*Farmers' Review.*

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Of the World's Fair premiums, 157 were awarded to Kansas exhibits.

The attendance at the State Normal School is about 100 less than at the same time last year.

Chancellor James H. Canfield of Nebraska University, formerly "our Canfield," enjoys a shiny new "L. L. D." that was conferred upon him by Williams College.

Mr. Gurney Binford, a graduate of the State Normal School, has accepted a position in the Friends' School at Tokio, Japan. He will have charge of the work in English.

The *University Courier* confesses that "About two hundred students skipped classes last Friday to give the foot ball team a rousing 'send off' on their departure for Denver."

The October number of the *University Review* contains an article entitled "Kansas Foot Ball," by Professor E. M. Hopkins. The article is headed by a very good picture of the Professor.

Prof. W. B. Strong, for the last two years the director of the musical department of Winfield College, is now the Professor of Music of the Southern M. E. Academy of Laredo, Texas.

Some rascals visited a number of business men in Topeka, collected advertising and money for a city directory, representing themselves as Washburn students, and skipped with the money.

The county high school of Atchison county at Effingham burned one day last week. The building and library is an entire loss. The school was well attended, and it is to be hoped that its friends and patrons will not let it suffer.

Dr. Barrows, the Chicago preacher and originator and manager of the Parliament of Religions, was formerly a Kansas school teacher, and at one time the Superintendent of Osage County. Rev. Geo. Pentecost is also "a formerly of Kansas" man.

The college spirit that has heretofore been in a dormant condition at Washburn was revived by Hallows' en, and enthusiasm is now running high. Class contentions are of almost daily occurrence, and the faculty are going to stop the disputes.—*The Capital.*

Superintendent L. C. Wooster, who has so successfully managed the Kansas Educational Exhibit, has been elected to a chair in the North Dakota State Normal School, located at Mayville. Prof. Wooster will always have a kindly interest in everything that has the odor of a sunflower about it.

College Life congratulates Emporia College that "Hallow's en passed with no disturbance at the College building." It adds: "The idea that it is very cute to steel the bell-clapper seems this year to have passed away. Formerly it was the bell-clapper itself that passed away. Even the preps. did not seem to think of it this time."

The great number of parties given every week mark a tendency toward too great development of social interests among students. Too much amusement not only keeps the student from his work, and thus thwarts the purpose for which he attends the University, but so satisfies the desire for pleasure that it loses its keenness. Too many late hours are not good for the moral or the physical health.—*University Courier.*

At the meeting of the building committee of the Board of Regents last Saturday morning it was decided to tunnel through the hill from the engine room to the library building and Chancellor's residence, to lay steam pipes for the heating of those buildings. The tunnel will run west through Snow Hall to Mississippi street, and then from Mississippi street through the hill to the library building. The total cost of this work will be about \$2500.—*University Courier.*

Membership on the Kansas Board of Directors for the Educational Exhibit seems to have been disastrous for Kansas, though fortunate for some individual members. Superintendent Bloss went to Oregon as president of the Agricultural College; Superintendent Boyd to Oklahoma as president of the State University; Superintendent Winans to Oklahoma as president of the State Normal School; Superintendent Roop to Santa Barbara, California, as Superintendent of city schools at an advanced salary; Superintendent Wooster to North Dakota as a member of the faculty of the State Normal School, and Superintendent Dickinson married a man of high degree. Kansas has a large number of such material still on hands, gentlemen, but does not care to have such a draft as this made very soon.—*Normal Quarterly.*

The *University Courier* reports that "An effort is being made by a few of the Seniors to get the Senior Class to petition the Faculty to follow the example of eastern universities in obtaining some eminent speaker to deliver an address in place of the old-fashioned Commencement exercises." The article closes by offering the opinion that "If the Seniors take hold of the question with the energy its importance should command and lay their petition before the authorities in time, success will crown their efforts; but if the effort consists of a little desultory talk, we will again have the pleasure of listening to papers which benefit only those who write them." The Senior Classes of the Agricultural College have discussed this matter for several years, but the Faculty have refused to change the time-honored custom, mainly because they could not agree on an acceptable substitute for the old commencement programme.

Boys Should Learn a Trade.

It is beyond question that want of occupation and inability to pursue a remunerative calling are strong incentives to crime. It is also true that our foreign population are more strongly inclined to crime than are those native and to the manner born. Because of this two things are very desirable: First, that so far as possible everybody should learn some trade or calling as is required in Germany. And the second is that we must see to it that the character of our foreign immigrants is raised. In fact, this is the chief demand of the time. Any view, therefore, of our criminal population which places the chief tendency to crime upon our American born and ignores the important factor of immigration in the problem is sure to be misleading.—*Christian at Work.*

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The Experiment Station should be addressed through the Secretary.

SOME POINTS ON SORGHUM.

BY PROF. J. T. WILLARD.

THE value of sorghum as feed is only beginning to be realized and acted upon. Sorghum, like corn, yields two feed-products, i. e., the seed, and the stalk and leaves. There are marked differences in the two, however. In corn, the kernel of the grain is larger and usually softer, leading to its easier utilization as feed. In the stalk, however, the advantage is the other way. Experiments have repeatedly shown that the grain crop of corn increases markedly up to the complete dryness of the leaves, so that in order to obtain even nearly the maximum yield of grain, the fodder must be sacrificed. Or, to obtain good fodder, considerable of the yield of grain must be given up. With sorghum, however, unless dried up by drought, the leaves remain green and thrifty long after the seed is perfectly mature, indeed until killed by frost. This enables one to utilize both products to the best advantage. There is sorghum and sorghum, however, and to obtain the best results intelligence must be used as much in selecting a variety of sorghum as a breed of cattle. Some sorghums have a stalk the outer layers of which, what might by a non-botanist be called the shell, are hard, almost flinty. Such stalks are usually possessed by the non-saccharine varieties, the shell being filled with a pith of little value as feed. These varieties usually have an abundance of leaves, and in some cases heavy seed-tops. The so-called Kaffir corns are examples of the latter class. The hard character of the shell can be greatly reduced by thick planting, but the nearly useless character of the stalk as feed can not be amended. It is of about the same value as corn stalks with all the leaves and leaf-stems off. In these varieties, then, we have the seed, the leaves, and the leaf-stems as the valuable portions. The following analyses will give some idea of their feeding value compared with hay and corn:—

	Prairie Hay	Sorghum Leaves	Corn	Sorghum Seed
Moisture.....	8.60	9.10	10.82	11.61
Ash.....	8.16	14.80	1.69	1.49
Crude Protein.....	4.79	9.31	10.86	10.63
Crude Fiber.....	28.05	18.63	2.10	1.25
Fat.....	2.47	3.82	2.32	2.59
Other Substances free from nitrogen (Starch, etc.).....	47.93	44.34	72.21	72.43

Inspection of these analyses will show that sorghum leaves compare very favorably with prairie hay, containing less of the nearly useless crude fiber, more fat, and nearly twice as much crude protein. It is worthy of remark, too, that the crude protein consists almost wholly of proteins, as that of hay does. Even when compared with timothy hay, sorghum leaves will be found almost if not quite equal by analysis. Comparison of the analyses of sorghum seed and corn show them to be practically the same. The actual value, then, is dependent wholly on the relative ease with which they can be appropriated by the animal. Corn undoubtedly has the advantage somewhat here, if both are fed in the whole state. Grinding or perhaps soaking the sorghum seed might obviate the difficulties.

There are other varieties of sorghum which in addition to these crops of leaves and seed, yield a third scarcely less, if less valuable product. The saccharine sorghums yield an amount of sugar which is not realized by feeders generally. For example, the Station for the purpose of testing fertilizers has been growing sorghum for several successive years on a rather poor piece of upland soil. Unfertilized plats alternate with the fertilized, and the former give an excellent illustration of what may be done on nearly every farm in this State where there is sufficient rainfall. For although sorghum stands drought as almost no other plant, it requires good rains in the early summer in order to make a good growth. The last season was only an average one for sorghum here, yet these unfertilized plats gave a yield of over thirteen tons per acre. The dry weather had dried the leaves much farther up the stalk than usual, so that instead of constituting one-third of the weight, they were probably not over one-fourth, or say three tons per acre. This variety was the Kansas Orange, which has a good sized seed top, that has the great advantage of not being subject to the ravages of the detestable English

sparrow. The yield of cleaned seed was over 2,500 lbs. per acre, or one and one-fourth tons. This is much more than would have been produced of corn on the same ground last season, and more than it usually would yield. In addition to the feed in leaves and seed this sorghum contained over one ton of sugar per acre, a factor of great importance surely, and worthy of the most serious consideration in deciding upon what to plant for feed.

Some suggestions might be made to assist the judgment further in deciding what kind of sorghum to grow. If sparrows are abundant, it is necessary to take a sort which they let alone. Varieties in which the seed is well covered by the glumes are necessary in that case. This season, red Kaffir corn, an excellent variety for seed and leaves, but non-saccharine, was completely robbed of its seed along one side of a hedge, while the plat of Kansas Orange on the other side was scarcely or not at all affected. The way the feed is to be handled must also be considered. If to be siloed, I have no hesitation in giving a saccharine sorghum with a good seed top the preference over any non-saccharine variety. If to be fed early as fodder, the same would be true. If to be kept till mid-winter in shocks, there would be much loss of sugar, and there would doubtless be a point at which the sugar remaining would not compensate for the somewhat less yield of seed. This applies to large stalks grown to maturity. If, as is often the case, it be sowed thick and cut as hay, or is not allowed to grow so large that the stalks cannot dry out readily, then, unquestionably, a saccharine sort should be chosen, which by drying before storing would leave even in young stalks a highly nutritious residue instead of useless pith.

STORM PERIODS.

BY PROF. E. R. NICHOLS.

SOME recent investigations carried on in the old country and in this, with reference to the periodic terms in meteorology, are interesting and instructive, and promise much toward establishing the cyclic period of meteorologic changes. The coincidence of terrestrial magnetic storms and sun-spots has been remarked for some time. This naturally led to a study of the magnetic condition of the sun.

Hourly observations of the three components of the earth's magnetism, horizontal force (positive north), declination (positive west), and vertical force (positive inward) were taken. These rectangular co-ordinates were reduced to polar co-ordinates in which s equaled total force, ι equaled horizontal component, d equaled vertical angle, and ζ equaled azimuth angle. The changes in the azimuth angle were most remarkable. Records from stations covering practically the northern hemisphere and extending over an eleven-year sun-spot cycle were taken, and reduced as above. These all gave simultaneously the azimuth angle directed southward for a period of eight days, then directed northward for a period of about nineteen days. Upon reducing these eight-day and nineteen-day periods to degrees, they were found to agree closely with the position of the solar magnetic poles as determined from photographs of the sun's corona. Calculations made from records of various stations covering a period of twelve years fix the date June 12.22, 1887, as the passage of the south solar magnetic pole past the earth, and the synodic period at 26.68 days, with a probable error of not more than 0.005 day. The magnetic poles of the sun, or coronal poles, as they are called, are situated about $4\frac{1}{2}^\circ$ from the solar axis, and the south pole is 102° of longitude in advance of the north pole. The north pole is probably positive, and is weaker than the south. The terrestrial poles are about 20° from the geographical poles, and the south precedes the north by about 222° . The south pole is positive and the stronger.

The nucleus of the sun is apparently in a rigid or highly viscous state, and hence changes in it take place slowly. It sends out magnetic lines of force which reach the earth. The strength of this magnetic field at the earth being about 0.000115 dyne, from which it is calculated that the magnetization of the sun is 269 dynes, or about one-fifth the maximum magnetization of steel. This may rise to that of steel in magnetic storms, or in severe storms to ten times that of steel. The photosphere of the sun seems to be the seat of another magnetic field, the electro-magnetic, which Maxwell regards as the true source of luminous vibrations. Accompanying these ether waves of electricity, is a magnetic field known as the radiant field, from its being directed radially toward the sun. The strength of this radial field at the earth is 0.000125

dyne, or a little greater than the coronal field. Prof. Bigelow, of the U. S. Weather Bureau, writes concerning these fields: "One must carefully bear in mind the fact that along with these two solar fields there comes to the earth two distinctly different types of ether vibrations, those of the radiant field being alternating linear displacements, and those of the coronal field being rotational or vertical."

But it is more especially the synodic period of 26.68 days that I wish to emphasize. The writer quoted above says of it: "This period has been tested in so many ways, and responds to all demands upon it so faithfully, that I have no hesitation in saying that it is the natural period to be adopted in magnetic and meteorological computations. It should, therefore, entirely supercede the calendar month, as a period for taking residuals with reference to a mean, because the calendar month has no reference to periodic recurrences of these phenomena, and consequently the residuals cut themselves up in applying to a long series of observations. This successful localization of the recurrent effects with reference to certain meridians on the sun, fulfills a long-felt need in physics, and will enable us to classify the heterogeneous mass of residuals in these subjects which have hitherto defied examination, and will also hasten on the process of elimination of the different systems of forces acting on the earth, and a separation into their appropriate parts. Thus there may now be found terms depending upon the diurnal rotation of the earth on its axis, the annual motion of the earth in its orbit, and the solar rotation of 26.68 days, which exhausts all the astronomical periods proper. I have found the use of this period so helpful in the study of meteorological phenomena, that its adoption in general cannot be too strongly recommended."

The mean magnetic curve for the European stations during twelve years from 1878 to 1889, as obtained from the residuals of the horizontal component r , shows crests the 3rd, 6th, 11th, 17th, 22nd, and 26th days, the prominent maxima being on the 3rd, 11th, 17th, and 22nd days. The mean weather curve for Washington for a period of ten years shows that severe weather may be expected near the 3rd, 6th, 11th, 22nd, and 26th days of the period, rather than any other time. Eighty-three periods since June 12, 22, 1887, brings the time down to July 4.66, 1893. Other dates of the passage of the south coronal pole past the earth are August 0.34, August 27.02, September 22.70.

1st.	3rd.	6th.	11th.	17th.	22nd.	26th.
7-4.66	7	10	15.5	21	26	30
Rainfall			.57		1.97	.36
8-0.34	2	5	10	16	21	25
Rainfall			.75	.98	.44	
8-27.02	29	9-1	6	12	17	21
Rainfall					.22	
9-22.70	25	28	10-3	9	14	18
Rainfall		1.99		.66		

The above table gives the beginning of four periods, with the days of the month on which the 3rd, 6th, 11th, 17th, 22nd, and 26th days of the coronal period occurred. Below each date the amount of rainfall in inches is given. The total rainfall from July 1st to October 31st was 9.61 inches, of which 7.94 inches fell on the "stormy days."

The maximum hourly velocity of wind for July was 36 miles, on the 16th; for August, 29 miles, on the 10th; for September, 39 miles, on the 21st; with an hourly velocity of 38 miles on the 17th. This is sufficient to indicate the applications; other cases might be given.

PAY YOUR DEBTS.

BY C. F. CASTLE, '94.

WE owe man anything but love. That debt can never be paid.

We sometimes wonder if the good old times of strict integrity, or, to better express it, the good old times when people lived within their means, is not in the past.

Some one has attributed one of the causes of the recent financial depression to the high living of the masses of our people. When citizens suddenly leave town, leaving bad debts behind them, they show that their money has gone faster than it was received. When there can walk on our streets, with elevated heads, those who have the reputation of not paying just debts, we conclude that something is radically wrong.

Have not such people formed the habit of trying to keep up with neighbors in style of whatever kind

it may be, even if some one else has to pay for it? The merchant can tell of numbers of people who find it an easy matter to get things charged, in the happy delusion that some time, some where, they will pay for it. As time advances, the merchant finds he has made a present to the would-be purchaser.

Why must we have a new piano or a gold watch, and other necessary (?) articles, even if the rightful fees are withheld from the family physician? It seems easy to rob others rather than ourselves, and too little is thought of it. Will the time ever come when the hard-earned wages will be paid dollar for dollar to the depositor, when those having control of the broken banks are again on their feet as comfortable and able as ever? Must the hard-earned money be earned over again, while the banker lives in luxury?

Two instances come to mind. One of a merchant who, with his family, lived in a very humble but comfortable way. The neighbors wondered that a man as financially sound as he should not provide for his family more commodious quarters. The time came when the merchant knew that he could rightfully provide for himself a fine mansion, which he did, and no person or cause suffered thereby. In the other instance a promising, rising young man, having a good profession and quick brain, believed not in the good old way of living within one's means, but dashed ahead, grasping for himself and family the good things of this life, believing the time would come when both ends would meet. The time came when there was a crash in his financial affairs, bringing misfortune to many others. He commenced business again a wiser man.

There is no habit more beneficial to young people than that of living within one's means.

What matters it, if we cannot have or do as the times seem to demand? The coat may be a little rusty, but it is paid for. There is a vast amount of pleasure in making the dollar go as far as it will; in making over the old dress to look like new, and to know that it rightfully belongs to the owner. The mental discipline which one gains is worth a fortune to him. In this way the inventive faculties are widely developed.

Of course there are times when it is necessary to borrow, but emphasize the fact that it is better to be a little odd, a little out of the fashion, than to live beyond one's means; for this often leads from little dishonesties to crimes. What is better than a clean conscience, even if the clean pocket-book must accompany it?

POLITENESS AMONG COLLEGE MATES.

BY E. L. FROWE, '94.

WITH the hurry from one class-room to another in the crowded college halls, there has grown a habit of carelessness among many of us students in regard to what we owe to our associates. How often you have been jammed and squeezed until you thought your time had surely come, all caused by the actions of some thoughtless person. Such circumstances have given us excellent training, to be sure, in trying to control our temper, yet I believe it is one's duty to look to the happiness of those with whom he comes in contact, and spare them any trouble or discomfort that is in his power.

We have seen persons push and crowd, scuffle, or throw articles across the room, which had they struck any one would have resulted seriously. No doubt they intended no harm, and would have been dreadfully sorry had any thing so happened, but because nothing did happen,—nobody did get hurt—they still continue, to the discomfort of others. Often too, we have been stopped and hindered from further progress for some seconds by some thoughtless person standing in the door. Such actions always cause a feeling of displeasure, which will become stronger and stronger, as it is given stimulus by the offending person, until it will finally become one of decided dislike or even disrespect.

There arises in our minds a suspicion that perhaps they have never had good training; and there is a consequent lowering in our esteem. The person who commands the highest respect is the one who attends to his own business. We would not check the fun and mirth that everybody ought to enjoy; in fact, we ought not to try, but rather should let it flow, but in the right place and at the proper time. It is impossible to prevent trouble, to a greater or less extent, in this crowded little world of ours, yet what a great deal of it could be averted by a little forethought on the part of each individual.

But what is the cause of all these little trials and tribulations? I think it can all be traced directly back to lack of politeness. It is the aggregate of the little acts that cause so much trouble. Somebody

passes in front of a lady or a body of persons, causing thereby a "jam." Somebody, forgetting his manners, stands in the way when he could step aside with no discomfort to anybody. What a change a few grains of politeness may cause!

I have noticed individuals enter college who look as if they had just been rescued from the remains of a last year's strawstack. In a year or so, what a difference! In the place of that awkward shuffle, that mass of tangled hair, that "awful" bashfulness, that stammering speech, and that characteristic so noticeable in new comers, "gawking," there has developed, in varying degrees, a neat, quick step, a well combed head of flaxen hair, a bright, honest countenance, and an easy manner, in fact, a perfect gentleman. Who can tell what may develop from these dormant qualities of "green farmer boys?" How often the person that exhibits the most "greenness" may become one of the brightest scholars? The quality is there, the ability is there,—why not? All that he needs is to have those latent elements aroused and to rub off the angles by association with his teachers and classmates. As a rule, such persons are quick to notice the defects in themselves, and follow the examples of those more advanced in the course. They notice the politeness shown or neglected, even when not observed by others. How quick they learn to tip the hat, and do many other little acts of courtesy.

As we go on through college and pass into the higher circles of society, the polite and courteous young person is the most successful. Nothing detracts from personal charms like a few defects in manners. Here at college is the place to begin to practice. By a little forethought, by observing how others do who have had experience, we may become efficient, and thus add much to a good, lovable character.

Let us all try to be more polite, remembering the many little deeds of kindness that will add to the comfort of others and make ourselves feel happy. If we do them in a kind and polite manner, we shall have friends wherever our lot may be cast.

Figuring on Food.

Mr. Edward Atkinson, of Boston, is the champion performer of sleight-of-hand tricks with figures. He can take the nine digits and a few naughts and prove more wonderful things than were ever dreamed of in the philosophy of Horatio. He can calculate (of course he can, being from Boston) the value of the time lost by the habit laborers have of pausing to spit on their hands, or the cost per ton per mile of transporting a car load of freight around the world in ninety days. There is no problem too minute, too great, or too intricate for him to solve. He says American laboring men pay too much for food, by buying the needed nutritive constituents in such combinations as make them altogether too expensive.—*Texas Farm and Ranch*.

The above is a fair sample of much that appears in the agricultural press as suitable food for farmers. It is intended, of course, to ridicule the special study and special training, combined with the indefatigable industry, which enables the distinguished author named to extract from a mass of statistical figures their hidden meaning. His wonderful power in this respect, and his taste and tact in unfolding the homely and useful truths these figures embody, and which to the great mass of men no possible study would reveal, even if they had the time and taste to attempt the analysis, has given to Mr. Atkinson a world-wide reputation, and has conferred on his fellow citizens a benefit which 10,000 *Farms and Ranches* cannot hope to equal in a century.

If the inference involved in the above is correct ignorance and stupidity are our safest guides, and the less a man knows about any subject the more competent he is to express an intelligent opinion. To devote a lifetime to the study of a subject—to master all the facts in its present condition and its development; to arrange and classify until their hidden meaning becomes apparent—all this, according to the *Farm and Ranch*, is labor wasted. The opinion of any ignoramus is just as valuable!

Unfortunately, such opinions are not confined to Texas. They pervade a large part of the agricultural press; and we have constant sneering allusions to the teachings of "theorizers," meaning thereby those who have devoted years to the mastery of a subject, as opposed to the opinions of "practical" men—the said practical men being often as ignorant as a horse, save as to the market price of the limited commodities in which they deal. According to these people a broad knowledge of the facts, as they have developed in connection with the growth of a subject, renders one a theorist, and unfits him to form an intelligent opinion. The less a man knows, and the more presumptuous he is, the more he is entitled to respect.—*Farmers' Home*.

What could be more appropriate than nut trees scattered along our road-ways, and what better work could a farmer do than to plant them along his place? They should not be planted densely so as to shade the road-way and thus cause it to be damp and even muddy as we sometimes see densely shaded drive-ways. Let them be planted twenty to thirty feet apart.—*Colman's Rural World*.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Prof. Mason will attend the Irrigation Convention at Wichita, November 22nd.

The Webster Society entertains invited guests this evening with a special programme.

The Fall Term Social will be held at the College on Thanksgiving Day eve, November 29th.

Farmers' Institutes are provided for at Oneida, Hanover, and Oberlin, but dates are yet to be fixed.

Regent Secrest visited the College again on Friday, to attend the public rhetorical exercises and the economic lecture.

Mrs. Lease will give the lecture in the Economic Course next Friday evening on "Hard Times: Their Causes and Cure."

Dr. Mayo will address the Riley County Educational Association at Randolph, December 19th, on "The Problem of Life."

Having outlived their usefulness, the old scales in the rear of College Hall have been removed and a drive graded over the site.

The rain of Saturday and Sunday last worked like a charm on the roads, laying oceans of dust in places more suitable than mid-air.

Asa Smith, Third-year, was called to his home in Osborne a few days ago by the illness of his mother. He may not return to College.

Prof. and Mrs. Failyer entertained a company of friends on Thursday evening of last week in honor of their cousin, Miss Pound, of Pueblo, Colo.

Prof. E. B. Cowgill, editor of the *Kansas Farmer*, Professor in this College in 1885-8, is Secretary of the Irrigation Convention at Wichita, Nov. 21st.

Dr. Mayo attended the Convention of veterinary authorities at Kansas City, called this week to settle upon boundary lines for quarantine against the Texas fever.

Hilda Walters entertained a party of friends last evening. The hours passed pleasantly in "the usual happy way," as one of the guests put it, both before and after refreshments.

Work on the new Engine House was checked this week by cold winds, making the erection of the iron trusses impracticable and bricklaying on the tall smoke stack uncomfortable.

The rising walls of the Library and Science Hall attract much attention on account of the workmanship and apparent massiveness of the pile. Manhattan stone never appeared to so good advantage in any previous structure.

There will be no college exercises on Thanksgiving day, but the usual routine of classes will be followed on the day after. It seems impossible that any large proportion of over five hundred students should visit their homes so near the close of the term, and therefore a day or two of vacation is too expensive.

The stone prepared for the new building by the Class of '93, and presented to the Regents on Class-day, will soon find its place. The Committee have selected a suitable spot in the north front of the building and will ask a committee of the Class to witness its location.

The Kansas State Dairy Association will hold its seventh annual meeting in Representative Hall, Topeka, on Dec 6th, 7th, and 8th. The College is represented on the programme by Regent Wheeler, who reads a paper on "Food for Dairying Stock;" Prof. Georgeson, on "Educating our Farmers;" and Sec'y Graham, on "Men who have made Dairying a Success."

Prof. Hood returned from Chicago a week ago, after seeing the College exhibits in the Liberal Arts and Kansas buildings safely packed for shipment home. The days after the Fair brought nothing of pleasure, but, instead, much of sorrow to those who witnessed on all sides the work of demolition—the tearing down and removal of exhibits, the digging up of grounds for the admission of railroad tracks even into the heart of the grand court of the Manufactures Building, and the littered grounds due to cessation of the cleaning brigade's labors.

The Butler County *Citizen*, Regent Stratford's paper, gives nearly four columns to a description of the College and its facilities for training youth, including a very pleasant account of Dr. Earp's last visit. Such words of praise as these are gratefully received: "Louis Agassiz once said: 'I am telling my friends in Massachusetts a very bitter thing; and I have become bolder and bolder in saying that I am under the impression that the whole system of popular education is superannuated; that what is taught is no longer the food that the rising generation want; and that the very knowledge that is taught is not the

best; so that I would change both the substance and the methods.' I believe he was right, and more and more we shall come to see that we are neglectful of such knowledge as in a large measure this institution is designed to supply. Given true principles and high purposes, together with the kind of work done at Manhattan as seen by the visitor with the eye, and we have the true ideal. Judging from the brief acquaintance which a hasty visit would allow, the faculty of the State Agricultural College are building upon a true basis of principle and purpose."

Following the lecture Friday evening of last week, the Second-year Class gathered in the Sewing Room for a social, and spent there an enjoyable evening. A musical and literary program was rendered, as follows:—

Organ Voluntary.....T. L. Jones
Toast, "Our President,".....Inez Palmer
Response.....E. C. Joss
Quartet, "Waves of the Ocean,"..C. Cole, A. C. Cutler, Maggie Correll, and Mary Pincomb
Baritone Solo.....H. G. Johnson
Recitation, "The Gypsy Flower Girl,"..Eva Staley
Instrumental Trio...Grace Secrest, C. W. Lyman, and A. C. Cutler

Hon. Albert Griffin of Manhattan gave the lecture in the Economic Course last evening, his theme being "Coinage," with a forcible argument for bi-metalism in the genuine sense of free coinage of both gold and silver. The lecturer presented reasons for having a stable, value currency, and quoted authority for the statement that gold has materially appreciated in the last thirty years, with prospects of a scarcity price in the future. Claiming that the United States has control of the price of silver from being chief producer, Mr. Griffin concluded that the free coinage by this country alone would hold the world to our price, assuming that silver should make the basis of all credit currency. The audience was not large, but all felt entertained and instructed.

The improvement that has been made in the Chemical Laboratory this fall has escaped notice thus far. Three new cases have been built and placed in the north part of the museum room, and with the old apparatus case have been so arranged as to cut off a portion to serve as a preparation room and store room. The chemicals and apparatus which had been scattered and inconveniently stored have been collected here in close proximity to the lecture room and laboratory. The bottles of chemicals are protected from dust by curtains, and the position of any class of compounds is shown by labels fastened on the outside of the curtains as well as to the shelves. Drawers and special shelving provide additional facilities. One of the cases includes a table fitted with water and gas where apparatus for the lecture room can be set up. The private laboratory has been dismantled and will be converted to office and study uses as soon as practicable.

A sketch of Prof. Georgeson's life, illustrated with an excellent portrait, graces the columns of this week's *Kansas City Live-Stock Indicator*, to which the following paragraph is introductory: "To no other race of people is western agriculture under greater obligations than to the Scandinavian—the Danes, Swedes, and Norwegians—the hardy, vigorous race that has its home on the North Sea. From this teeming hive, for a thousand years or more, have poured forth successive swarms that have more than held their own in their migrations to the South and West. Their objective point, in the days of the warlike Vikings, was Ireland and Scotland; in these latter days they have some with peaceful intent to the shores of the new world, and, passing by the older settled portions of the country, have spread themselves out from Wisconsin to the Dakotas on the north, and to Kansas and Missouri on the south. They are mainly an agricultural people, with the agricultural virtues—industry, economy, and thrift—strongly developed. Devout by instinct, conscientious in their convictions, and untiring in their industry, it need scarcely be said that communities in which this element prevails are thrifty and prosperous. Who ever sees or hears of a Scandinavian beggar? While furnishing in unnumbered thousands hardy and industrious tillers of the soil and busy workers in almost every department of human industry, this race has given to America, and especially to the West, some of the most eminent students, scientists, and statesmen. In some lines of agriculture, and especially in dairying, we are indebted to it for the most recent and valuable inventions and improvements; for example, the practice of deep setting, the separator, microbe culture, and like improvements. It is with great pleasure, therefore, that we present to our readers the lifelike portrait of a typical representative of this vigorous and enterprising race." Following the biographical sketch, the article concludes in these words: "Prof. Georgeson has now before him a field of usefulness such as should satisfy the ambition of any man. The people of Kansas look to him, not merely for the latest scientific researches, but for a line of experimentation that will aid in the solution of the confessedly difficult agricultural problems of that State. He is asked to suggest crops which can be grown where the rainfall is deficient and where it is fully adequate, crops which will conserve fertility, and furnish rations for stock feeding in widely different sections,—to be the adviser of farmers in a new country with but imperfect knowledge of its capabilities and resources. He has thus before him a work that will occupy a long life, and leave in the end much undiscovered. In this arduous and difficult work he should have the cordial co-operation and support of every Kansas farmer. Vigorous in mind and body, an untiring student, an honest experimenter, thoroughly educated, and having, for a man of his years, an unusually wide range of experience, we know of none to whom the Kansas farmer can look for suggestions with greater prospect of practical help than to Prof. Georgeson. He is happy in a wife who is in full sympathy with her husband's views and ambitions.

The Kansas Agricultural College in all its departments is thoroughly practical, and Prof. Georgeson is but one of a band of tireless workers in agricultural science and practice with special application to the problems with which the Kansas farmer must deal."

GRADUATES AND FORMER STUDENTS.

R. R. Rees, '85, was chosen Attorney for Ottawa County at the recent election.

Jennie Selby, Second-year in 1892-93, is a successful teacher in Lexington, Nebraska.

D. G. Fairchild, '88, cables from Genoa, Italy, his safe arrival on the 15th after a delightful voyage.

Bertha H. Bacheller, '88, was one of two successful candidates for State certificate this year, the number of applicants being more than fifty.

G. G. McConnell, of Menoken, Third-year in 1883, receives a medal and diploma for the excellence of his clover exhibit at the Columbian Exposition.

W. E. Butler, Second-year in 1892-3, writes from Albuquerque, N. M., where he is private secretary to the manager of a coal company, for his INDUSTRIALIST.

Eusebia Mudge, '93, is visiting with College friends and the few classmates she finds here. Miss Mudge is book-keeper and amanuensis for her father at Eskridge.

Geo. H. Brown, Second-year in 1882-3, occupies the responsible post of Chief Train Dispatcher on the Union Pacific Railway, with headquarters at Cheyenne Wells.

Grant Selby, student in 1880-1, now in employ of the C. R. I. & P. Railway, called on Wednesday to visit his sister in College, and to greet old acquaintances among the faculty.

C. F. Newby, Second-year in 1891-2, orders the INDUSTRIALIST that he may renew acquaintance with the College interests. He is with a firm of grain dealers at Tonganoxie, Kansas.

W. H. Olin, '89, Superintendent of Osborne Schools, appears upon the programme of the Autumn meeting of the Northwestern Kansas Teachers' Association, and is also on the Executive Committee of the State Teachers' Association.

C. H. Thompson, '93, writes of most satisfactory work in study and teaching at the Shaw School of Botany in Washington University, St. Louis Mo. He begins to realize that the instructor has his full share of hard work in the class-room.

Harmony School, Lillian A. St. John ['91], teacher, gave a box social recently at which J. W. Hall acted as auctioneer, and \$12 were raised for the purpose of making additions to the school library.—*Riley County Educator*.

Fanny E. Waugh, '92, writes from her home near McPherson, that she is giving some time each day to her post graduate work in botany and drawing. In the latter study she is working at pen drawing of botanical specimens for photo-engraving.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith.

Ionian Society.—President, Mary E. Lyman; Vice-President, Marian E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembley; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

November 10th.

The Alpha Beta Society was called to order by President G. L. Christensen. The program was opened with a violin quartet by Messrs. Fryhofer, Christensen, and Clothier, and Grace Secrest. The Society was led in devotion by Walter Harling. Miss Clemons was initiated, after which Eva Philbrook read an interesting essay, giving the history of a certain lead pencil, from the time it was purchased until old, careworn, too short to be of further service to its owner, it was laid on the shelf of "worn-out things." The question, "Is it beneficial for a country to have a union between Church and State?" was argued on the affirmative by J. E. Taylor and Bertha Steele. W. H. Phipps supported the negative. The affirmative argued that since the leading foreign nations had not seen fit to divorce Church and State, it must be of great good to them, and so would be to us. The State would be obliged to support the preachers, which would be better than the present method of support. They would be better housed, better clothed, and better fed. The negative discussed the condition of things in ancient time when Church and State were al-

lied. Spoke of the untold thousands that had been murdered by the State in the name of the Church, and showed that the union of the Church with the State was the enslaving of men, depriving them of freedom of speech and thought; placed the Government under the jurisdiction of one man whose God should be the God of his subjects, whose religion should be the religion of those he ruled. The Judges gave a unanimous decision in favor of the negative. The Gleaner, containing the productions of the third division, edited by R. W. Rader, was an excellent number. After recess, a duet, "Peace to thy Spirit," by Misses Palmer. Extemporaneous speaking was generally indulged in. Society closed with a quartet, "My Love's Own," by Messrs. Clothier, Harling, Spaulding, and Ridenour. A. E. R.

November 11th.

The Hamiltons were called to order at 7:30 by President W. O. Staver. Prayer, E. L. Frowe. The program was opened with a declamation by A. C. Remington. A. L. Peter presented "A Christmas Hunt," the title of a well written, spicy, witty essay. A good declamation was then presented by H. D. Brown. C. F. Doane presented his oration in full. It showed good thought and careful preparation. Debate, question, "Which is doing the greater damage to property, Fire and Water or Fire-Water?" The affirmative was argued by R. S. Kellogg and E. O. Farrar. Some of their points are—the great damage done to property annually by floods, washouts, etc., great losses of property on ocean, and mention of several large cities that have been completely wiped out by fire. Property destroyed by fire is gone forever, and cannot be restored. The negative was argued by F. B. Dodds and J. W. Holland. Some of their points are—that nine hundred millions of dollars worth of property is destroyed annually by "Fire-Water," that property burned is not destroyed forever—simply a chemical change, that man is the property of God and one soul is worth more than the whole earth, while "Fire-Water" is taking many to the drunkards grave annually. The Judges, F. C. Sears, W. E. Smith, and C. Adams, decided in favor of the affirmative. Next came a select reading by J. A. Hoge. "Jakie on water-melon pickle" was the title, which is suggestive of its humor. J. T. Trumbull gave a discussion on the "Manufacture of Matches." The Society was next entertained by a talk by F. C. Sears, followed by W. E. Smith. W. I. Joss presented an edition of the Recorder, Motto, "He that sitteth upon a red hot stove shall rise again." Considerable enthusiasm was shown under the head of extemporaneous speaking. We notice that the art of making an extemporaneous speech is rapidly spreading in our Society. F. Y.

November 11th.

The Websters were called to order promptly at 7:30 by President Ames. Although the night was stormy a large majority answered to their names at roll-call. I. A. Robertson lead in devotion. The rights of membership were conferred upon A. F. Gildemister. Vice President F. J. Smith was then called to the chair, and the affirmative of the question, "Resolved, that the development of our nation is due more to its resources than its government," was discussed by E. A. Donaven and H. J. Robison, while F. W. Ames and F. Rummel supported the negative. The affirmative said the agriculture and the mines of the West have developed our nation to its present standard; they have caused the building of railways, the opening of rivers and harbors, and the building of cities. Our mental development has not been as great as that of other countries, as is shown by the nationality of the scientists of the past. The development of our schools is due to the resources at hand. The government of France was contrasted with that of the United States; the form of government being the same, but the resources vastly different. In reply the negative answered that, the people of France are different from us; that they have fewer advantages. The condition of Russia was compared with that of the United States, the resources being about the same. The laws have made our schools and colleges what they are by land-grants, etc. Electricity is one of the modern sciences. America has her share of scientists here. The great railways have been built by aid of the Government, thus promoting the development of agriculture and mining. The Society decided in favor of the affirmative. B. R. Hull read a humorous essay entitled "Essays." In a declamation, A. L. Eidson presented to perfection Dr. Puff Stuff in his "Lecture on Patent Medicines." Then followed a quiet before the storm, W. J. Rhoades playing the organ. Suddenly point of order followed point of order, and appeal followed appeal until the Society adjourned for ten minutes recess, after which C. R. Pearson presented Volume 24, Number 5, of the Reporter, it being punctuated here and there with applause. W. H. Stewart discussed the topic, "Destruction of Wealth," and S. M. Hanlon that of the "Laboratory and Factory Methods of making Sugar as controlled by the Government." After unfinished and new business, the Critic reported at 10:20, and Society adjourned at 10:30. F. E. U.

A writer in a farm journal speaks very truly when he says: "There are a great many things in the world that are hard to understand—that is, for a man of my age. I say of my age, for I observe that younger men know and understand much more than I do. I will not say precisely what my age is, but I am over fifty. A man to know the most must be about twenty. He is then pretty sure to know nearly everything, or if there is anything he does not know, it is something not worth bothering about. Speaking for myself, I find that the sum of positive, genuine knowledge I possess is not so great as it was many years ago, when I was about Tim's age or a little less.—Colman's Rural World.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Every county in the State ought to have a County High School.

Seven new school houses were built in Dickinson County in 1893.

Enterprise has a Kindergarten conducted by a lady from England.

The County High School of Dickinson County has enrolled 200 pupils this term.

There is a district in Wabaunsee County the assessed valuation of which is \$40,000, and which has had but one child of school age during the last three years.

Of the teachers gathered in the Riley County Association, thirty-four have been students at the Kansas State Agricultural College, thirteen of them being graduates.

It may be a surprise to some of our students to learn that the Kansas State University does not care to support or is not able to support any literary societies.—College Life.

Baldwin city intends to graft another joint on top of her flagmast as soon as the town-carpenter can spare the time. Baldwin High School beat Lawrence High School at foot-ball.

Prof. E. M. Hopkins of the State University gave the first of a series of University extension lectures at Kansas City on Thursday evening of last week. The subject was American literature.

There are 122 districts employing 155 teachers in Dickinson County outside of Abilene. The schools of Abilene employ 19 teachers and the county high school 7, making a total of 181 for the county.

The Phi Kappa Psi fraternity at Kansas University has purchased the Basset property on Mt. Oread, and will at once begin work to fix it up to occupy it for a chapter house. This has long been an object desired by several of the University societies, and the Phi Psis are the first to succeed.—Kansas City Star.

The Emporia College Life reports another step toward the emancipation of the weaker sex: "The enthusiasm shown at the ball game by college girls is surely very encouraging. Some of them sacrifice a whole afternoon, almost tire themselves out walking to the grounds, and use the remaining strength in cheering and shrieking."

A former pupil of Bethany College at Lindsborg, now a student at Yale, writes to the Bethany Messenger: "Here is a scholastic ease which you do not find in the west. If foot ball does not monopolize the student's time, if he has a desire for study, and if nature has endowed him with a reasonable amount of brains, he has no excuse for remaining ignorant." Of the club members he says: "They are muscular, dauntless fellows, with the daring spirit of sea pirates." Further on he remarks: "Smoking is a prevalent habit here. I am sorry that I have not learned the art; it makes me feel lonesome; and I believe it is all Mr. D—'s fault because he fed me on two-for's which gave me an invincible antipathy against all tobacco. I will nevertheless try to be heroic and bear up under these adversities as well as I am able. With my prophetic eye I see approaching the day when my oft-repeated efforts shall be crowned with success."

The twenty-seventh annual meeting of the Kansas State Horticultural Society will be held at Holton, Jackson County, on Tuesday, Wednesday, and Thursday, December 5th, 6th, and 7th, in response to an invitation from the local Society. Free entertainment will be afforded to all delegates and horticulturists in attendance from abroad, and it is expected that all railroads and connecting lines running into that city will grant the usual reduction in fare. A program of proceedings will be issued in due time, and mailed on application. To this meeting the friends of horticulture are most earnestly invited, and will be most cordially welcomed to all the privileges of the sessions and hospitality of the friends at Holton. Papers and reports by committees will be prepared for the occasion upon subjects of interest to all and of vital importance to the success of the industry in the State, and each will be open to a full and free discussion to all persons in attendance. Address G. C. Bracket, Secretary, Lawrence.

At Kansas City the question of negro children attending the grammar schools with white children has been brought up, and the controversy may be taken into the courts. A delegation of the patrons of the Barrett School in the Fourth ward appeared before the Board to protest against the attendance of the children of a negro family named Rhodes. Mrs. Rhodes, mother of the children, also appeared before the Board armed with an affidavit in which she stated that she was not a negro, that her husband was not, and that the children had no negro blood in their veins. This was contradicted by her relatives, however, who stated that her husband was black, and that the wife also had negro blood. The Board deferred action in the matter, so that the relatives could make affidavit to support their assertions. The Rhodes children have been attending the school ever since it was established. The Board, however, decided that it would take the children out of the school when it was established that they were negroes and that they would be sent to the Lincoln School, which is exclusively for negro children. In the High School there is no distinction regarding race, and negro children attend there with the whites, but in the graded schools the pupils have always been separated.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

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E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOTSMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

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J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

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W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

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A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

LAUNDRY.

WOOLF BROS. LAUNDRY CO., of Kansas City, Mo., is first class in all its appointments, and the largest in the west. Its patrons are well pleased with the character of the work. Leave your Laundry at Pacific Express Office. Shipments made each Tuesday (noon train), returned each Friday in time for social and society meetings. Express office will be open Monday, Friday, and Saturday until 8:30 P. M. D. W. March, Agt.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

WM. A. ALLINGHAM'S market is the first on Poyntz Avenue on your way to town. Choice cuts of meat always can be had. Fish and game in season.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

BARBER SHOP.—Stop in and try Whittington's barber shop. The first on your way down town. I defy competition on pompadours. All work equally first class.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

THE INDUSTRIALIST.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.
The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

STEER-FEEDING AT THE KANSAS EXPERIMENT STATION.

BY PROF. C. C. GEORGESON.

IN pursuance of the line of experimental feeding which has been inaugurated at this Station, we are again this year engaged in feeding several lots of steers with a view to throwing more light on practical questions which present themselves for solution on this subject. The growing and marketing of beef must always remain an important industry in Kansas, and the sooner all the problems can be settled which bear on the economic production of beef, the better for all concerned. From the nature of the case it must necessarily take a long time to reach definite conclusions, and it is therefore important that the work should go on uninterruptedly.

The present work is confined to two features, both of which are of a practical nature. One of them is a comparison of scrubs with thoroughbred steers. The question which is presented for solution may be formulated thus: Is there any merit in the pure-bred beef breeds for the economic production of beef, when compared with common unimproved stock, which should entitle them to be preferred above the latter by our farmers and feeders? Professor Sanborn, while connected with the Missouri Agricultural College, asked this question of two lots of steers he was feeding, and the steers answered it in the negative. His results have caused much doubt among farmers as to the merits of pure-bred stock for beef purposes, and so far as I am aware, no other station has since given this careful study. It is nevertheless a question of the greatest importance. If our desire for improved breeds is a mere hallucination; if, measured by the yard-stick of economic production, the pure-bred animal has no claim to our preference, then we ought to know it.

In the experiment now under way at this Station, we are approaching this question from an impartial standpoint. There is no desire to show that either one side or the other is at fault. Twenty steers are employed in the experiment, divided into two lots of ten each. One lot of ten consists of thoroughbred registered shorthorns. The other lot of ten steers is the offspring of common cows far removed from aristocratic ranks. They are mostly out of family cows which were kept for their milking qualities, but which nevertheless had little or no improved blood in their veins. They were picked up as calves from the country around Manhattan by a farmer who intended to rear them for beef. He had them in his care nearly a year, and he gave them the ordinary treatment of young stock raised on the farm for beef purposes. He had a lot of about fifty yearlings of this character from which the ten head here referred to were selected. At the time of their selection they were on prairie pasture along with the rest of the herd. They were not a prepossessing lot, though they represented the average of such stock, and were of fairly even quality. They cost \$16 per head. During the previous winter they were carried through mostly on "roughness," with a very little corn, and were therefore not in high condition.

Six of the shorthorn steers were bought from the justly noted herd of T. H. Mastin of Kansas City. They were yearlings past, of good size, averaging somewhat above 700 lbs. and were out of some of the best bred cows of that herd. The other four shorthorns were bull calves from seven to eight months old from the herd of T. P. Babst, Dover, Kan. They, too, were fine average specimens of shorthorns, which many breeders would have considered plenty good enough to rear for breeding. These calves were castrated, on arriving at the Station, and then given place in the experiment. The operation gave rise to some trouble, however, and for some time it was found necessary to favor them more than the others to aid in their recovery. All the shorthorns were bought at \$40 a head. Both lots were dehorned.

The object is now to treat all these steers alike as regards feed, shelter, and care in every particular, and to note the results. The past summer they have been pastured together in a good prairie pasture with plenty of grass, shade, and water. They were weighed when put into the pasture, and again when they were taken out a few weeks ago. All had made fairly good gains; but the scrubs had gained the most! This winter they will be wintered on the plan usually followed by farmers in the West. They will be kept in the open, but have free access to good shedding. Their feed will consist of corn fodder, prairie hay, and a moderate allowance of grain, of which they will get enough

to keep them growing without interruption. Next summer the plan is to pasture them together again, and the following winter, if they, in the meantime, have made a satisfactory growth, they will be fattened for market. Under these conditions, being handled as the majority of Kansas farmers find it practicable to handle their cattle, it ought to be a fair test as to whether it is the scrub or the thoroughbred that is entitled to our preference.

The other feeding experiment now in progress at this Station is intended to throw some light on the question whether or not there is any advantage in soaking corn before it is fed. It is a common practice with many good feeders to soak the corn before it is fed, and they are prone to attribute their success to this practice. If there is any merit in soaked corn which dry corn does not possess, then the facts should be made known in order that all feeders may take advantage of it. We have in this test ten steers, divided into two lots of five steers each. They are about two and one-half years old, of high grade short-horn blood, and when put in the test averaged 1030 pounds a head. They are remarkably uniform in quality, and would be regarded by good judges as a superior lot of cattle. They are fed in the open, but provided with shedding. One lot of five steers is fed on dry shelled corn, all they will eat. The other lot is fed on shelled corn which has been soaked thirty-six to forty-eight hours before it is fed. To eliminate, as far as possible, the evil effect which might result from the freezing of the soaked corn in the feed trough, they are fed but a little at a time and fed often. At present they are fed corn five times a day, this being the same for both lots. The plan is to continue this method until the end, unless exigencies arise which necessitate modification. Light shoats have been placed after each lot of five steers, and the difference in the amount of pork produced will also be noted.

The soaking of grain feed has many advocates. Others claim to have satisfied themselves that the practice is injurious, or at best that there is nothing in it. The only way to settle the point is to repeat experiments of this kind often enough to dissolve all doubt.

THE AGRICULTURAL AND MECHANICAL COLLEGE OF OKLAHOMA.

BY PROF. J. D. WALTERS.

THE accompanying plan of the grounds of the Oklahoma Agricultural and Mechanical College represents the future, though eight or ten years of well-directed work will undoubtedly make it a reality.

The institution was located at Stillwater, the county seat of Payne County, by an act of the first Territorial Legislature, who accepted the offer of the City to donate a quarter-section of land for a site and contribute \$25,000 for a college building. The farm is a beautiful piece of nearly level upland adjoining the town on the northwest. It has sufficient drainage in two directions, and overlooks the country, especially southward, from ten to twenty miles. The soil is not rich, but it is well suited for experimental purposes. The only negative feature of the location, its distance from the railroad and from abundant water supply, will probably not be permitted to exist long; the air of the Territory is as full of railroad and other improvement projects as that of Kansas was in its boomiest days.

The experimental work of the Station was commenced two years ago, but the work of instruction did not begin until last year. About one hundred students attended classes in a frame church placed at the disposition of the Board. There will probably be one hundred and fifty students during the present school year. The farm is devoted to experimental purposes, and its condition reflects great credit upon Professors Magruder and Waugh, the Superintendents of the Agricultural and Horticultural Departments. The writer of this, who visited the College last June upon invitation of the Board of Regents for the purpose of locating the buildings and laying out the campus and other improvements, has not seen a better kept, more carefully tilled, and more systematically laid out farm west of Chicago.

The grounds represented by the cut comprise about twenty-five acres, located in the southeast corner of the farm. Of the buildings, only the dwelling of the Director and the experimental laboratory are completed; and these are cheap frame structures, which in a few years will have served their temporary

purpose. The main building, or College Hall, is in process of erection, and will probably be finished by Christmas. It is a well-arranged and handsome stone structure, two stories high, with a good basement. Some day it will form the west wing of a building three or four times as large, with a roomy chapel, library, and several offices in the central part, and drawing, music, and domestic economy rooms in its east wing.

The other buildings shown in the cut will probably be built at the rate of one or two a year. These separate department buildings will be plain but substantial one-story stone structures, nearly fireproof, and each of them of an exterior characteristic of its purpose. The Armory and Gymnasium has been placed in the foreground and in the vista of a street of the city in order to make it a prominent feature of the campus, which is also to be the drill ground. The Mechanics' Hall and the Science Hall require rear shed and rear access, and have been placed accordingly. The steam plant and power house is located near Mechanics' Hall and in the vicinity of the ravine for obvious reasons. Its tall chimney will be visible down the Arkansas river for forty miles. A buildings, especially Science Hall and the Chemical Laboratory, will be provided with light and airy basements for storing tools, apparatus, patterns, and supplies. The stables and barns will be located about five hundred feet northwest of the steam plant, near the center of the farm.

A glance at the plan will show that the buildings are clustered around the open front lawn in the form of a semicircle. With dense and tall plantings between them and in the rear, as indicated, they will present a grand view from the City, and especially from the southeast. A liberal use of evergreens, i. e., cedars, Austrian pines, Scotch pines, African pines, Norwegian dwarf pines, and some Colorado spruces—varieties that will undoubtedly do as well in Stillwater as they do in Manhattan—will give life to the cyclorama during the winter, and a fountain near the center of the grounds will add that element with out which no landscape can be considered complete. The horticulturist of the institution, Prof. Frank A. Waugh, who is a graduate of the Kansas State Agricultural College and an enthusiastic landscape gardener, has drawn detail plans for the work of planting that are worth careful study by the citizens of the new State who intend to make similar improvements.

There is no reason why the Oklahoma Agricultural and Mechanical College should not develop rapidly into one of the leading educational institutions of the West. If the men in whose care it has been placed will work as faithfully and intelligently at their task as the pioneers of the Cinderella State are working in a hundred cities and upon many thousand farms, the day cannot be far off when half a thousand students will throng the class rooms, laboratories, and shops.

The net profit on the World's Fair business to the Illinois Central was \$239,635. The road expended over \$2,000,000 getting ready for the Fair, and if the improvements made are considered permanent its profits are about \$1,500,000. Out of the 19,000,000 passengers carried, not one was killed, and there were but five persons injured; and their injuries were slight and due to their own carelessness.

INFLUENCE OF BAD JUVENILE LITERATURE.

BY ALICE RUPP.

ONE day, says the *Household*, a gentleman went into his library and took down a book from the shelves. As he did so, he felt a slight pain in his finger, like the prick of a pin. He thought the pin had been stuck by some careless person in the cover of the book. But soon his finger began to swell, then his arm, then his whole body, and in a few days he died. It was not a pin among the books, but a small and deadly serpent.

Many serpents are found among books in libraries now-a-days, and it is not more difficult to rid our orchards of the insect pests than to protect the minds of our youth from the sting of the curculio of bad literature.

These serpents are found among the leaves of those books which make us discontented with our lot in life; which induce us to think lightly of crime and sin by giving pretty names to ugly things; and be it remembered that reference is not made here to obscene lit-

is traced directly to the reading of that class of stories to which we refer.

Surely we must not allow this turbid stream of corruption to flow on and make no attempt to check its evil course. What means can we employ to cleanse the source?

One, and perhaps the greatest means to the desired end, is to form early in the mind of the child a taste for what is pure and lofty in sentiment, which as the years roll on and on will develop into a love for the pure and beautiful in literature, rejecting with disgust the nauseating stuff of unnatural sensationalism and relishing only that which will elevate and enrich the mind.

It naturally seems that to the parent belongs this first, as well as chief, duty to the child. Before the little ones are able to read for themselves let them listen daily to the reading of some pretty story from the juvenile periodicals, which are as numerous today as they were scarce a few years since. This sowing and planting will take much of that precious

time which so many mothers prefer to spend socially or in charitable (?) works of various kinds, but weigh carefully time against results then answer the question, "Does it pay?"

Children naturally enjoy the rhythm of poetry, often remembering many of the words, hence the reading of simple poems from our best authors, or any verse that contains noble sentiments, is of incalculable value in awakening a love for the beautiful in reading.

This step is of primary importance in creating a desire for good literature, and if the habit once formed is stimulated and fed with the proper nourishment under the guidance of ever-

watchful parents who know what the youth is reading, there is little danger of our boys and girls ferreting out some secret place in which to drink the vile poison of immoral literature.

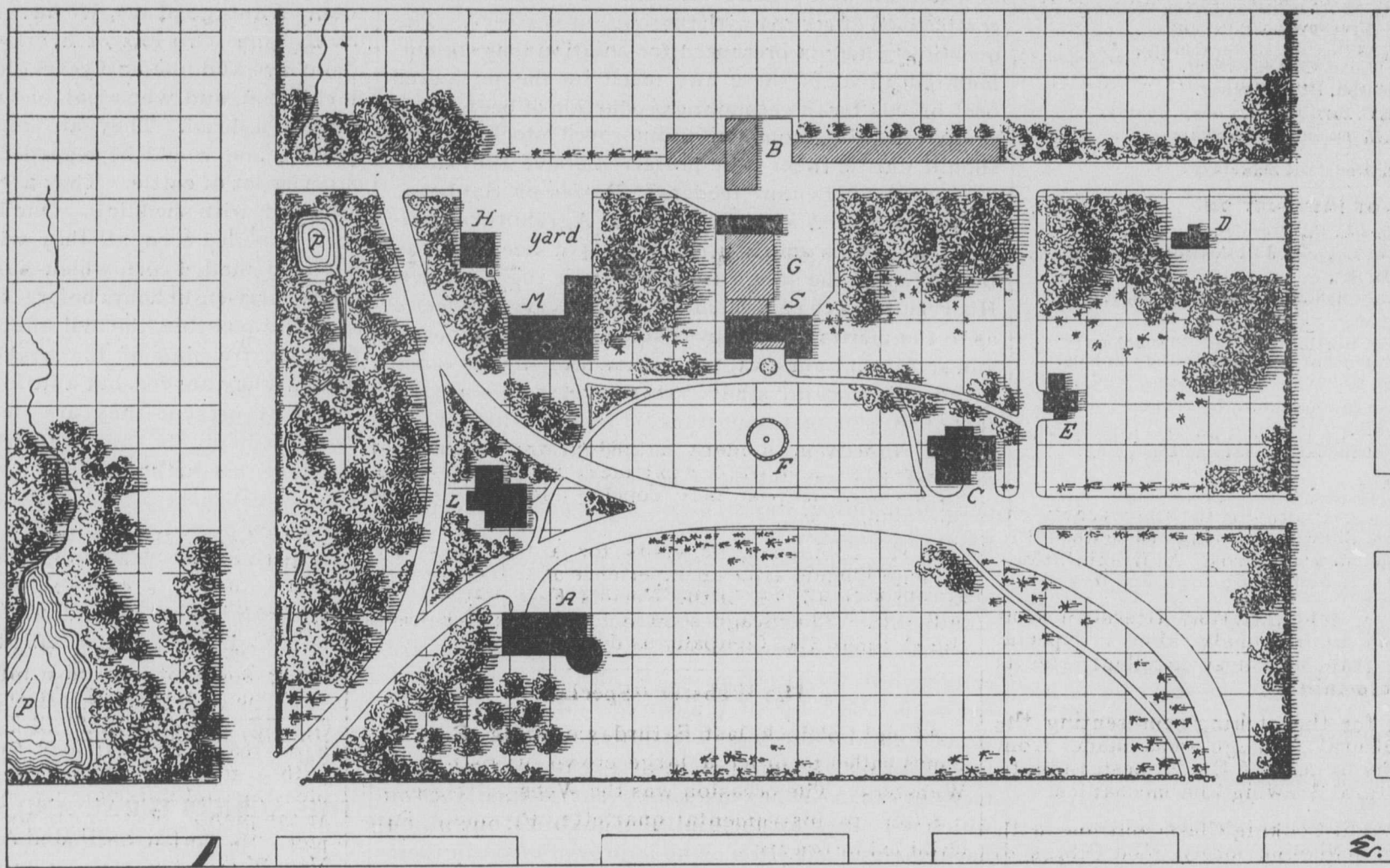
A teacher's opportunity in this direction is second only to that of the parents. Often times parents, either through ignorance, thoughtlessness, or the lack of means, make no provision whatever for their children's reading, and it is in cases like these that her influence is felt, and to her alone, many times, falls the first chance for awakening the desire for reading of any sort. Such being the case, is it not clear that a great duty and responsibility rests on the teacher from the very outset of her school work? Her powerful influence in this direction, often extending beyond the child to the parent, is sometimes the means of awakening an entire neighborhood from its Rip Van Winkle slumbers.

The public librarians rank with the teacher as being a potent benefactor in this respect, and do much to carry out the teacher's plans. Competent and intelligent as they are in the knowledge of books, they should make it their business by timely conversation and suggestion to guide the minds of those seeking instruction and relaxation, to books that are innocent and wholesome while also entertaining.

In these days, when the shelves of our libraries and book stores are teeming with attractive stories of the great and good in all ages, there is no excuse for resorting to the pages of unnatural sensationalism, disfigured by villainous pictures.

History is now made as fascinating as a fairy story; biography is now no longer simply the dull memoir, but awake like the life whose story it tells, while travels and adventures are most charmingly portrayed in the explorations of Livingstone and Stanley.

"The love of good books is a safe-guard to virtue." By awakening that love early in the mind of children, intelligent and moral citizens are formed.



PLAN FOR IMPROVEMENT OF GROUNDS OF THE OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE.

P—Pond.
H—Steamplant.
M—Mechanics' Hall.
L—Laboratory.
A—Armory.

B—Horticultural Barn and Open Sheds for Student Vehicles.
G—Greenhouse.
S—Science Hall.
F—Fountain.
Campus.
D—Dwelling of Director.
E—Experiment Station.
C—College Hall.
Main Entrance.

The small squares measure 50x50 feet.

erature, which, thanks to the energetic societies of noble men and women, has well-nigh disappeared from circulating among the young; but to the vast and villainous aggregation of the so-called "libraries" and story papers that you find on almost every newsstand in the city. These are the agencies which in the words of Tennyson—

Feed the budding rose of boy-hood
With the drainage of the sewer,
Send the drain into the fountain
Lest the stream should issue pure.

In order that the reader may not think this an illusion, a mere fancy picture, I ask you to consult the reports of vagrancy and crime among the boys and young men.

The mayor of Philadelphia says: "If all the bad literature for boys could be destroyed, it would almost free our station houses and prisons of their youthful criminals." A prominent judge, whenever a young boy is brought before him for crime, asks him the question, "What have you been reading?" and almost without exception the act has been instigated and encouraged by the reading of disreputable stories either from the base pages of the yellow-covered novel or the still more pernicious ones of the sensational weeklies. The hero committed some daring deed which our boys long to imitate, and in fact sometimes do; for these stories one and all relate either to the wild adventures among Indians, pirates, and desperadoes, or the exploits of highwaymen and vagabonds.

Not long since one of the leading Eastern papers devoted two columns to an account of the flight of two boys from homes of refinement, luxury, and indulgent parents to seek for excitement and adventure, and for what they foolishly imagine may be termed independence. The cause for these boyish escapades

Calendar.

1893-94.
 Fall Term—September 14th to December 22nd.
 Winter Term—January 9th to March 30th.
 Spring Term—April 2nd to June 13th.
 June 13th, Commencement.
 1894-95.
 Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

The library has just received 101 volumes from the binder.

W. E. Thackrey, Third-year, visited Lawrence two days last week.

Chancellor Snow spent an hour at the College Thursday afternoon between trains.

An epidemic of colds has kept many students from classes one or more days two weeks past.

The iron foundry is casting sash weights for the new buildings. Almost four tons will be required.

Professors Failyer and Mason represent the College this week at the Irrigation Convention at Wichita.

B. R. Hull, Second-year, drops out of classes on account of sickness, and returns to his home in Alta Vista.

The College foot-ball team plan a trip to St. Marys on Thanksgiving Day to play the team of St. Mary's Academy.

A. G. Bittman, Second-year, made a flying visit home on Friday last to see a cousin who had just returned from abroad.

The first volume of the Flock Book of the American Cheviot Sheep Breeders' Association has been received from the Secretary.

The Alpha Betas are practicing for their yearly exhibition to be held on Friday evening, December 8th. It need only be up to the standard of A. B. exhibitions to be a good one.

The Ionian Society held yesterday afternoon what its numerous visitors unanimously called a "special session." The program was most excellent, and its rendition highly entertaining.

The pen drawing for the etching representing the Oklahoma Agricultural College was made from Prof. Walter's drafts by Arnold Emch, postgraduate student in architectural drawing and mechanics.

Mrs. Kedzie's Special Cooking Class continue with increasing skill to compound many good things to eat, having given special attention for a few days past to the construction of fruit cakes, one of which will soon be in demand at a wedding feast.

Prof. Popenoe donates to the Library a volume entitled "A Short Course in Arithmetic," by F. W. Bardwell, formerly Professor of Astronomy in the State University. The book bears date of 1878, and is said to be something of a curiosity in arithmetics.

The President and Corresponding Secretary of the Ionian Society want to thank the anonymous sender of a newspaper clipping recently received, entitled, "The Painting on Ancient Greek Figures." The text described the figures as "brightly colored, and the hair of every one painted red." Since the young ladies in question in no wise resemble Greek figures, and their hair is described by their friends as a beautiful shade of auburn, they are at a loss to understand their correspondent's motive. Will he explain?

For almost an hour yesterday afternoon Miss Harper had the undivided attention of the Chapel audience in an entertaining description of a tour by the speaker through historic Norway. The places of interest visited were pointed out on a map prepared for the occasion. Miss Harper enjoys the distinction of being the first woman to descend a Norway copper mine, to which entrance is effected by a shaft about 700 feet in depth, traversed by a small bucket, the unstable appearance of which is not calculated to inspire confidence in the visitor, and it may well be imagined that it requires considerable "nerve" in a woman to make the trip. The speaker narrated enough of the amusing incidents of her journey to keep her hearers awake.

Last evening, in the Economic Course, Mrs. Mary E. Lease spoke for an hour and a half to an attentive audience of six hundred. With the topic "Hard times: their causes and remedies," the lecturer gave prominent evidences that the present times are hard, claiming that the past twenty years, beginning with the panic of 1873 and closing with that of 1893, show a period of hard times caused by failure in legislation for fair distribution of wealth. The land question, the money question, and the transportation question have been so treated, she said, as to insure hard times of which the present are only the beginning. The remedies are to be found in return to the Constitution, as interpreted by the speaker, in the true spirit of Christianity. Recent financial legislation was described in strong terms as destructive and treasonable. Nationalism, as a step toward true socialism, was prescribed as the final remedy for all hard times. The speaker deprecated any thought of other than a peaceful settlement of the difficulties, saying that the world has got beyond war into a

stage of civilization where attention is given to the needs of the age, and a way will be found for just agreement upon the vexed questions of our times.

The weather for a week past has run the gamut of variability from sunshiny 70° to frigid 14°, with stops at nearly all intermediate points. During the cold days it is necessary for the workmen on the new buildings to heat the water with which they mix the mortar. The brick masons perched upon the smoke-stack of the steam plant are anything but comfortable these cold days, but they expect to soon finish the job.

The Botanical Department is investigating a disease of the onion, which promises to be a serious one for this region. Some of the various varieties experimented with in the gardens, this season, in conjunction with the Horticultural Department were quite materially injured. A very good knowledge of the nature of the disease is being obtained by cultures in moist chambers. The disease works in the bulb, and has very much the appearance of smut to the naked eye. It is a species of *Aspergillus*, not common on the onion.

GRADUATES AND FORMER STUDENTS.

Rev. A. J. White, '74, is in town on business. He is pastor of a Chicago church.

B. W. Green, Second-year in 1892-3, has gone to Lake Kerr, Florida, for the winter.

A. D. Rice, '92, being sick, his school at Keats has been taught for two weeks by his sister Ada, Third-year.

W. S. Pope, '92, is with an engineering corps on an exploring tour in Arizona, and has gathered some Aztec relics as souvenirs of the expedition.

Bertha Kimball, '90, has just finished some fine drawings of the peach-tree borer and plum curculio for the use of the Entomological Department.

Mrs. Eliza Davis-Stringfield, '73, has been visiting for several days with Mrs. Goodnow and Mrs. Irish, returning from the Fair to her home in Pomona, California.

E. A. Munger, student in 1888-89, who has had an interest in the Howard Apartment House in Chicago for six months past, is in Topeka, and plans to visit the College soon.

G. K. Thompson, '92, visits for a few days with College friends after an experience of several months as clerk in a hotel in the World's Fair district. He will return to Chicago soon and enter the service of the Pullman Car Company as draughtsman.

The Webster "Special."

At eight o'clock last Saturday evening, President Ames called to order a large crowd of visitors and Websters. The occasion was the Webster "Special."

After an instrumental quartette, President Fairchild led in prayer.

The programme for the evening was opened by an address, "College Secret Societies," by J. M. Williams. Mr. Williams' address was well written and delivered, and deserved the hearty applause which it received.

B. F. S. Royer and I. A. Robertson argued, pro and con, the question, "Life Insurance is Beneficial—Should it be a State Institution?" Their careful presentation of the subject in its many phases showed earnest and diligent work, so characteristic of a typical Webster.

Following the debate was an oration, "Two Stages of Thought," by J. U. Secrest. Mr. Secrest spoke of the changes of thought from the general drift of previous generations, caused by the recent discoveries in the scientific world, and said we had now put aside the superstitious beliefs of olden times.

A cornet duet by Messrs. Brown and Arnold, followed, and was in turn followed by the Reporter, the Society paper, with E. H. Freeman as editor. The paper proved to be an excellent edition and an honor to the editor. "The Speech of Charles Sumner on the Kansas-Nebraska Bill" was delivered with good oratorical effect by A. C. Cutler.

The Webster Quartette, consisting of Messrs. Patten, Pope, Cutler, and Smith, sang a selection and responded to an encore with an original song.

Under the heads of new and unfinished business, the Society engaged in its regular routine of work, in some cases much to the pleasure of the audience.

At about ten o'clock the Society adjourned, and the visitors expressed their appreciation of the evening's entertainment in the many congratulations extended the Websters on their energetic work; and all declared that the Webster Society was still, as it always has been, in the lead of similar College organizations.

F. J.

Horticultural Notes.

Another point in favor of clean culture, if such a thing was necessary, was afforded lately when the apple trees of the experimental orchard were examined for borers. None were found in any of the trees except in the west row, which is close to the grass along the edge of the orchard. Here a number were found. Prof. Mason reports a similar experience in his orchard at home. Wherever the ground was in the least weedy, borers were found, but where it was clean none were seen.

The trees in the orchard have been wrapped

with old newspapers from the Library. This is decidedly economical material, and will answer every purpose. Each paper is tied in two places with binding twine, and a little dirt thrown about the bottom to keep it from blowing out of place. Care should be taken to have the free edge of the paper fit up snugly to prevent its being torn off by the wind.

The experimental vineyard is being pruned by the boys having special horticultural industrial, and one vine each of varieties that are at all tender is covered. The covering is a very simple operation. After the vine has been pruned, bend the canes over as close to the ground as possible, without danger of breaking, and cover with six or eight inches of dirt. The canes may be held in place by hand while a little earth is piled up. The cost of laying down and covering is less than three cents per vine; and four or five cents is an ample estimate of the entire cost of covering a vine and uncovering in the spring. How many pounds of choice grapes will be needed to pay for this?

One of the strongest growing vines in the vineyard, if indeed it is not the strongest, is *Vitis Doaniana*, a southern species, but entirely hardy here. A cane of this year's growth measures a little over seventeen feet, and it will be remembered that last summer was not a good season for grapes, either.

The question of plum stocks for peaches has received, and is still receiving, considerable attention from writers on horticultural subjects; some claiming that they are well suited for the purpose, and others taking the opposite side of the question. A case in point is the young peach orchard on the College Farm. About half the trees are on plum stocks and the others not, and the former may be picked out at a glance. The growth is not so vigorous and healthy, and at the union of the stock and cion there is a difference in size of fully half an inch and often more, the cion having overgrown the stock. Besides this there are a great many sprouts about the trees on plum stocks. On the whole, the evidence here is rather against their use.

F. C. SEARS.

COLLEGE ORGANIZATIONS.

November 17th.

The Ionian Society was called to order by President Lyman. The opening exercises were congregational singing, prayer by Miss Wilkin, and roll-call. Misses Bayless and Pfeutze were elected and initiated. The programme opened with an interesting edition of the Oracle, edited by Maud Kennett, the following being some of the most interesting articles: "The Sophomore Social, Exercise, Webster Special—It's coming, Autobiography of a Rose, and Trials of the First-year. Rena Helder then favored the Society with a vocal solo, which was rendered in her usual pleasing and entertaining manner, with Miss Grout at the piano. Extemporaneous speaking, on the subject, "Is fiction detrimental to the public mind?" Miss Wilkin spoke in an entertaining strain, followed by Misses Hayes, Carleton, and Turner in a few words. Messrs. Jones and Stingley, visitors, spoke on the subject. Ethel Patten read an article entitled "Woman's Queerness."

I. R. F.

November 18th.

The Hamilton Society was called to order promptly at 7 o'clock by the Corresponding Secretary. Prayer, F. A. Dawley. The President being absent, F. Yeoman was elected temporary chairman. F. V. Dial and T. M. Holland were initiated members of the Society. The program of the evening was opened by a well written essay entitled, "A Summer Evening" by O. Bentz. C. S. Pope delivered an oration which was well received by the Society. Select reading by E. A. Yeager. Debate, question, "Do joint political discussions ever change the complexion of election returns?" C. M. Brobst argued the affirmative. He claimed that the truth is presented better in the joint discussion than when only one side is discussed. He gave a short illustration of this, and cited us to the joint discussions between the Farmers' Alliance and the Republicans two or three years ago, and to the success of the former. R. J. Barnett, in presenting the negative, explained the condition of a man's mind when he goes to one of these interesting meetings. He thought that men weighed the subject for themselves and voted for their own interests and did not allow oratory to convince them. He also named instances where the result of the election was evidently from the effect of something other than oratory. The Society decided in favor of the affirmative by a small majority. G. B. Norris gave an interesting talk on Ornithology, a subject in which he is interested. He recounted the difficulties the young ornithologist has to meet, and related some amusing incidents of collecting tours. G. V. Holsinger gave us the news. W. E. Bryan and C. M. Doll favored the Society with a violin duet. Under extemporaneous speaking, Mr. C. H. Freeman, a "Webster," gave us a friendly talk.

R. K. F.

If any paper more than another is of value to the grower of live stock it certainly must be the *Breeder's Gazette*. How any stock-raiser who pretends to keep abreast of the times can do without this great weekly journal, if such there be, is a mystery; but there cannot be many, for the paper is an acknowledged leader in its class, and as such is read by wide-awake husbandmen everywhere. The *Gazette* gives full value for the two dollars charged for a year's subscription, but it is given to clubs of five at \$1.25 each, and to clubs of ten at \$1 each. Address the publishers, J. H. Sanders Publishing Co., 358 Dearborn Street, Chicago.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Oberlin school boys are organizing a militia company.

Hon. H. N. Gaines and Hon. John McDonald will deliver addresses at the Southwest Kansas Teachers' Association at Emporia on the 30th of this month.

Garfield University at Wichita will close on the 18th of this month, and will not resume again this winter. A number of the Garfield students will enter the State University.—*University Courier*.

The State University library has been the recipient of a considerable amount of pharmaceutical literature from the library of the late Dr. Drake. The donation is of great value to the School of Pharmacy.

The School Board of Topeka has decided to give the Superintendent an assistant to look after the office-work in order to make it possible for the head of the schools to visit the classes and assist in the work of organizing and illustrating.

The State Board of Public Works announced last week that it had decided to let the contract for the new wing of the State Normal School to John Bukley of Kansas City, who was the lowest bidder. Mr. Bukley's figures were \$29,950.

Too much amusement not only keeps the student from his work, and thus thwarts the purpose for which he attends the University, but so satisfies the desire for pleasure that it loses its keenness. Too many late hours are not good for the moral or physical health.—*University Courier*.

It is evident that the lack of activity in the classes and in the University life generally is being counteracted by the increased social activity. The number of parties is so great that we are inclined to believe that social activity is fast approaching, if it has not already reached, that high degree at which it becomes injurious to the best interests of the students.—*Lawrence Journal*.

The district schools of Douglas County were awarded a premium at the World's Fair for the best exhibit of school work shown in the educational exhibit there. This is a great send off for the schools of the county, and should be a matter of pride for County Superintendent Peairs and the teachers who worked so hard to get the exhibit together, and to the children whose work made up the exhibit.—*Lawrence Journal*.

Every community may be said to be divided into two classes—those who desire to learn, and those who do not. The difference is noticeable in every department and every detail of their lives. The first see beauties and wonders in nature and in art that the second know nothing of; the first find fountains of delight in their fellow-men where the second find them flat and unprofitable; the first are full of ever-growing life and activity; the others are dull and unprogressive.—*Exchange*.

Every bill in connection with the Kansas educational exhibit at the World's Fair has been paid, and there is a small balance in the treasury. With the exception of \$1000 contributed by the Commissioners and \$200 by the State Teachers' Association, the entire sum for this exhibit was contributed by the school children of the State. The work was begun amid much discouragement, but the results were very gratifying to those having the matter in charge.—*Lawrence Journal*.

What's the matter with Baker University? The *Beacon* complains: "For many years it has been deemed the part of a college life to assist in some misdemeanor. College life did not seem complete unless some daring deed had been accomplished—some trick or meanness performed. This theory has gradually increased till things have come to a pitiful state. We are sorry to say it, but Baker University has reached this point. The institution is all right, but some members of its students act far from the standard of gentlemanly conduct. Social gatherings can no longer be held unless some sort of vandalism is practiced. What is worse, the deeds become more desperate and daring each time. A week has not passed since such mean, uncalled-for work has been done, but as yet no reparation has been made."

Professor L. I. Blake, who fills the chair of physics and electrical engineering at the Kansas University, has just received word from the patent office at Washington notifying him that letters patent had been granted for a fog signal device to be used by vessels at sea in communicating with each other. Over four years ago the first application was made for a patent, and its final granting is the result of the most thorough investigation of the merits of the apparatus. It is broad in its scope, and gives Professor Blake much latitude in completing and further perfecting the invention. Professor Blake is still at work on this signal apparatus, and is also conducting on the Kaw river a series of experiments looking to long-distance communication between ships at sea. The latter scheme had some of the same principles involved as the first, and will include some electrical arrangements that are not yet entirely perfected.

Boys Should Learn a Trade.

It is beyond question that want of occupation and inability to pursue a remunerative calling are strong incentives to crime. It is also true that our foreign population are more strongly inclined to crime than are those native and to the manner born. Because of these two things are very desirable: First, that so far as possible everybody should learn some trade or calling as is required in Germany. And the second is that we must see to it that the character of our foreign immigrants is raised. In fact, this is the

chief demand of the time. Any view, therefore, of our criminal population which places the chief tendency to crime upon our American born and ignores the important factor of immigration in the problem is sure to be misleading.—*Christian at Work*.

The "Get-theres" and the "Get-me-theres."

Whatever may be said by those purists who regard every word as slang that is not at least old enough to vote, it must be said that American slang is, at the least, picturesque and expressive, and often conveys in the shortest possible time and the fewest possible words the exact idea of the speaker. When it does so it will find a place in the language, even if some highly respectable word which has the sanction of all the dictionaries has to step down and out. Inasmuch, therefore, as the reader knows what we mean by the "get-theres," better than we can tell him in any other way, we have no apology to offer for a heading which the purist in language would regard as undignified, to say the least. Nor do we make an apology for coining a companion phrase. These phrases define two large classes of men, including farmers, as widely different in character as the "righteous and the wicked." The measure of success in life which any farmer, or any other man or class of men, attains depends largely on the degree in which he is a fitting representative of one class or the other.

The "get-there" farmer is the man who always gets there, or accomplishes his purpose, at least as nearly as possible. He determines to plant so many acres, and he does it, not always at the time he first determined, for he cannot control the weather, but he does it, nevertheless, and that without fail. Much of his success is due to the fact that he calculates to some purpose, knows the limit of his own powers and the amount of reserve strength on which he can draw in an emergency, and does it. The grass never grows under his feet. He is earnest, resolute, determined, bends all his energies to the accomplishment of his purpose, knows how to direct and control men in his employ and to get the best results by directing labor intelligently. He has the habit not only of using his own energies, but the capacity of infusing his energy into others, so much that men naturally dilatory, and often absolutely lazy, are surprised to find how much they can do, and actually do, under his direction.

"Get-there" depends first, last, and all the time on himself. If there is a bargain in sight he does not wait until some more vigilant neighbor has secured it: he does not even give him a chance. He gets there first. If any crop is to be secured in a certain time, or a field of corn to be cut up before frost, he does not wait on his neighbors to get through first to help him. He is quite generally an earnest partisan in his politics, and a strong and able advocate of reforms, but he does not depend on any of these to help him accomplish his purposes. Our readers can all pick out the "get-theres" in the neighborhood.

The "get-me-there" is a man of an entirely different type. He is always wanting help. The type is a very ancient one. "Put me in a priest's office that I may eat a piece of bread," is the way the inspired writer describes him, and the description is as true now as when it was written.

The beggar is only the exaggerated type of the "get-me-there." The farmer who is always planning and working, but never getting a county office is another type. The "get-there" depends on himself; the controlling idea of the "get-me-there" is to depend on somebody else. He is simply a parasite on industry. He could do something "if somebody would only give him the chance" or "fix" him. If somebody would only give him money he thinks he could make money, but the idea of making money so that somebody will think him capable of being trusted with it never enters into his head. If, in some way, by inheritance or lucky accident, he has secured capital, he tries to attach himself to men of real energy, so that in some way he will be carried along.

There are two distinct types of the "get-me-theres." The one is always expecting that somebody will give him a lift or do something for him, while the other is constantly studying how to make other people work for him, or induce people to get him there. The latter class will, in its supreme selfishness, once in a while form a trust or combination, while the other class in simplicity wait for the government to help them, or for some reform to introduce the industrial millennium, or, like Micawber, for "something to turn up."

The "get-there" in the meanwhile turns something up. He is ready for reforms, if they come, and will use them to the best advantage, but he does not depend on them. He has full faith that he can make a good living under any form of government or under any administration or policy that may be adopted. His reliance is first, last, and all the time on himself. And that is the main reason why he gets there; or, in other words, is always a pronounced success.—*Live-Stock Indicator*.

When every acre of the farm cannot be made to produce something it is a sure indication that the farmer has too much land. It is better to cultivate only as much as can be well manured and kept clean than to leave vacant fields that keep the farm stocked with weeds to be spread over the cultivated land.—*Farmers' Review*.

We all know that the success of any boy depends almost entirely on starting him right; then he will succeed and gain a competency. The farmer has the best opportunity. He can give his children something to start them right; and he should be the leader in this work, for this is the foundation of all reforms.—*Samuel W. Allerton*.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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WM. A. ALLINGHAM'S market is the first on Poyntz Avenue on your way to town. Choice cuts of meat always can be had. Fish and game in season.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work, studies, examinations, grades, boarding-places, etc., may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

EXHIBIT OF WOMAN'S WORK IN LAND-GRANT COLLEGES.

BY MRS. NELLIE S. KEDZIE.

IN the Agriculture Building at the World's Fair, the United States Government made an exhibit of work done in the Agricultural Colleges and Experiment Stations. One alcove was devoted to the work for the education of the girls of the land who avail themselves of the opportunities offered by these institutions of learning. Five Land-grant Colleges contributed articles for this exhibit.

Purdue University sent a carved pulpit, which stood in the center of the alcove. The even cutting of the figures forming the design shows that some girls are skilled in the Yankee art of whittling, and use it to good purpose. No one who looked carefully at this pulpit could doubt the usefulness of the art of wood carving; for the steady hand, quick thought, and even patient toiling necessary to produce such a piece of furniture must do much to help toward making a strong, steady woman who can be depended upon when an even hand and patient waiting are needed.

The Massachusetts School of Technology sent a variety of products, all of them showing the work of fertile brains that have directed willing, well-trained fingers. The coloring of yarns was an industry in the farm homes generations ago; but the variety of shades these Massachusetts girls displayed is ahead of any old-time colors. The blues shown in one frame of assorted shades of yarn from class work in coloring may have come from the same basis as did the color of the blue stockings our grandmothers knit; but the indigo pot would stand abashed beside the array of delicate blues shading up and down to the absence of color on one side and the combination of all colors on the other. Further work in colors we find in the designs for silk, for wall paper, for woolen dress goods, and for carpets. The trained eye, the obedient hand, the fertile brain, must all be present to attain such results.

The larger part of the exhibit in this alcove was enclosed in glass cases. At one end hung a map of the Kansas College Farm, drawn by a student in this College who did the surveying and drawing during her third year's work in the College course. Here were found also samples of work in Botany and Entomology—one herbarium of spring plants, one of plants gathered during the fall term, and one of winter twigs and buds. Alongside of the Botany, cases of entomological specimens proved that girls know not only how to gather flowers, but how to mount bugs, and pin butterflies as well. Above these cases hung several drawings of entomological specimens, which were executed by a graduate of this College who is employed by the Entomological Department.

Of course, thus far the displays are only of work which is shared by the young men. These articles are shown to demonstrate the fact that both girls and boys are taught these special lines of work. Iowa, Utah, and our own Agricultural College each sent a very good exhibit of work done in the department of Domestic Science. Of course the sewing could be put in shape to hold its dainty freshness and to appeal to the beauty-loving people who passed by. Utah sent several garments, and the fact that her teachers of Domestic Science in both Household Economy and Sewing are graduates of this College gave to us additional interest in this exhibit. The dresses from Utah and from Kansas were neither elaborate nor of especially expensive or showy material. They were just such simple wool dresses as any well dressed girl needs to have, and, as they were cut, fitted, and made entirely by students, they did show ability and were an index of the work College girls can do even in forty minutes a day.

The other articles in the sewing exhibit were indicative of the variety of work a class of girls choose to do—a dainty dress with lace-trimmed ruffles, a soft, fluffy "comfort" for a bed, a quilted petticoat, a pair of linen pillow cases with drawn work and hemstitched hems, dainty undergarments with durable linen lace, doilies for table decoration, and drawn-work handkerchiefs, all and every one of which were the work of girls during class hours, and the making of which was a pleasure which carried with it compensation; for any girl who will do one such article neatly has given herself a lesson in finger training that will serve her well in any kind of sewing. A calico dress will be better made if a girl knows how to hemstitch a handkerchief well. Daintiness begets dainty work everywhere.

The cooking, too, was not forgotten. "Domestic

Science" remembers that the center round which a home gathers is a good table.

Not many kinds of cookery could be exhibited; but Iowa sent fruit cakes, light and dark, jellies, and confectionery. Utah and Kansas had each a small case of glass shelves on which were placed loaves of various kinds of cake—fruit cakes, layer cakes, and loaf cakes cut in half or quarter to show the grain of the cake and the filling between the layers. There were scattered about this part of the case, plates of doughnuts, cookies, salted nuts, and class-made candies. Loaves of bread were wrapped in the bread cloth, and just over them hung an analysis of wheat flour made by a Massachusetts girl, while over the whole food exhibit stood a case containing an analysis of five different kinds of foods. The bottles containing the water, oil, starch, salts, etc., of eggs, beef, potatoes, and apples showed that Land-grant Colleges give their girls scientific knowledge as to the ingredients of food, and the goodies displayed below gave proof positive that they know how to put that knowledge into practical use. Analyses from Massachusetts, cooking from Utah, that go together as though all made by the same class, show the line of teaching to be similar in East and West. Above these exhibits were hung pictures of the classes at work, kneading bread and making pies, fitting dresses and designing wall paper—all girls who will, because of the practical education given them, make of themselves helpful, useful women wherever they may be placed, and who will make happy, comfortable homes in many a community, where earnest women are needed.

And now the great Fair is over. The exhibit is brought home, and is today unpacked. The food was, of course, thrown away. The bread and the cakes had simply dried out, leaving the texture, color, and grain in perfect condition.

Many people asked over and over, "Will you tell me if that cake is made of wax?" Others said, "Is that real cake?" While frequently the question came, "How many days will that cake stand? and how often do you renew your cakes?"

The exhibit was taken to Chicago the last week in April, and it stood all summer. Nothing was changed. When we know that one of the gentlemen in charge of the packing up actually tried to eat one of the six-months-old doughnuts, we feel sure that its outside appearance, at least, was still appetizing.

Did all this work for a Fair, lasting six months, pay? There can be no doubt about it. It paid in the benefit the classes of girls derived from the preparation of the articles to be sent to Chicago. It paid in the knowledge it brings to us that we can, in a definite way, show to strangers the kind of work we are doing, and it pays, as it always pays, to see what we can accomplish in a given time for a given purpose.

There cannot be a true education for men and for women unless there be some differences, because their work must of necessity be different during much of their lives. They must have, to a certain degree, different training, and in showing the work done by the Land-grant Colleges for the young people from their farm homes, it was necessary to show the alcove of "woman's work." And now, as the various garments go to the girls who made them, and are scattered over these great States of Kansas and Utah, they will be reminders of the busy days when we were planning for the World's Fair; and the memories of interested thought in connection with student's work for that Fair will reach homes in Massachusetts, in Indiana, and in Iowa, as well as in Utah and Kansas; and the stimulus of good work displayed will reach to numberless classes that will work in these Land-grant Colleges in years to come.

LABOR'S DIGNITY.

BY PROF. O. E. OLIN.

THE dignity of labor is a high-sounding phrase often used as a sort of shibboleth by those whose only idea of labor is muscular exertion. Manual training is sometimes called for as an adjunct of the public schools, in order that children may be taught "the dignity of labor."

Used in any such sense, the phrase is misleading. There is nothing in labor itself that is ennobling: in fact, any labor that is without use or purpose becomes mere drudgery. There is a dignity to labor because somewhere there is a thinking man behind it. He who gives his strength in work because by it he can support himself and others, or do something for the welfare of the world, has felt the ennobling touch of

labor, and will show it in his life. Manual training can teach the dignity of labor only as it shows a man that he can train his hands to work out the thought of his brain. The man who wields the pick or swings the axe or drives the plane or follows the plow to work out a determinate idea or a plan for good, dignifies his labor and himself.

There is a plan now to pass through the soil electricity of low intensity, and so mix with the growing plants nature's most vital force that it may stimulate all the powers of vegetable life. Just so must thought be mixed with all we do to make it worth the while of a thinking man; and when this is so, the most trivial work of the farm or the shop will be lifted above the plane of drudgery by being an object of thought and plan.

There is a dignity in doing one's best. The best boot-black in the city must take pride in his work. Neat manuscript, smooth brick-work, straight corn-rows, are all legitimate objects of pride: it has taken thought and effort to make them such; and he who in his work, whether of hoeing potatoes or building a house, gives an air of completeness by making it the best he can do, adds to it also a touch of the same romance that hangs over the work of the sculptor and the painter; namely, the power of perfection. Such work reacts upon the worker, and gives to him a dignity in his labor that neither poverty nor misfortune can take away.

When men shall in this way put something of themselves into all they do, and in counting-house, field, and shop shall give earnest thought to lighten useless burdens, to doing necessary work in better ways that better results may be achieved, they can settle many social questions, and can talk in rational and convincing ways about the dignity of labor.

HINTS ABOUT LETTER-WRITING.

BY ALICE RUPP.

LETTER-WRITING is very much a matter of habit, and for that reason it is important that young people should learn early to consider it a pleasant way of communicating their thoughts to their fellow companions, instead of a burdensome task to be got over as quickly as possible.

How often is a letter prefaced by an apology of great length, in which the writer excuses himself by saying he has no gift for letter-writing, as though it were something like an ear for music, only accorded to the few favored ones.

But the truth is any one can write very interesting and pleasant letters who will only take the trouble and persevere in the effort. The great difficulty in the way is that they are too selfish and indolent to try. Nothing that is of much moment comes without great labor, and if you do not care enough about your friends to put forth this increased effort, you deserve never to receive any letters yourself.

There are a few simple rules which if observed carefully will remove many of the difficulties.

In the first place, always write clearly and legibly. It spoils much of the interest and pleasure of a letter, if it cannot be read without puzzling out every word as though it were some mathematical problem of great weight.

The second requisite, and of parallel importance, is the spelling. Thomas Jefferson, in one of his admirable letters to his daughter Martha, says:—

"Take care that you never spell a word wrong. Always before you write a word consider how it is spelt, and if you do not remember it, turn to the dictionary. It produces great praise to a lady (or gentleman) to spell well."

And Lord Chesterfield, a noted authority in the polite world, writes to his son as follows:—

"I must tell you that orthography, in the true sense of the word, is so absolutely necessary for a man of letters, or a gentleman, that one false spelling may fix ridicule upon him for the rest of his life; and I know a man of quality who never recovered from the ridicule of having spelled *wholesome* without the *w*."

But it needs not the authority of Jefferson or Chesterfield to convince us of the great importance of correct spelling. Numerous cases occur daily, in which good positions are lost from no other cause than that some word in the letter of application has been misspelled. "Whatever else you may learn, be sure and learn to spell well," was the advice given by Mr. Simpson to the students of the Agricultural College.

Many persons have the appearance and pretensions of refined ladies and gentlemen, and yet to read one of their poorly spelled and ridiculous letters sends the chill of disappointment and sometimes disgust through every fiber of our being. Such a letter is no discredit to one who has had no educational advantages; but to one who bears a diploma from seminary, college,

or normal, school it is nothing more nor less than a disgrace.

How often we hear persons claim that spelling, like poetry, is a natural gift, and lament the fact that this talent was omitted from their composition. Just in so far that some can learn to spell more rapidly than others is the statement true. But, supposing that some persons can never acquire the faculty for spelling—does the assertion excuse them for sending a badly spelled letter? Better take Jefferson's advice, and consult the dictionary for every word than to run the risk, especially in a letter of importance, of misspelling a single one.

Words, like faces, are learned by their looks, hence the necessity of careful attention in reading and writing that the form may become thoroughly photographed on the memory.

From personal observation in this direction I think I can truthfully say that most of the mistakes in spelling are in the use of simple, common words, and are the result of carelessness rather than ignorance; such as *untill* for *until*, *to for too*, *there for their*, *loose for lose*, etc., etc. Therefore be watchful and deliberate.

There are many other mistakes which might be avoided by attention to the general rules of spelling which all may find clearly stated in the dictionaries.

Care must be exercised in the use of capitals and in punctuation, as upon the latter often depends the clear interpretation of the thought which the writer wishes to convey.

In selecting the words that are to clothe the thought, avoid, as far as possible, all foreign expressions, giving preference to the "home words" of the language—the words used in the family and best standards of English. Avoid all slang phrases, or any expression that will tend to lower the tone of the composition, or cause a blush of regret when it is too late to recall the missive speeding on its journey to the absent ones.

As short sentences are easier to write and easier to read than long ones, let your sentences be clear, concise, and so framed that there can be no mistake made in the idea to be conveyed. Clear sentences presuppose clear thought. "Clear thinking," says Lowell, makes "clear writing;" and this is true in many cases. Sentences with the words thrown together in chaos must represent thought in the same disordered state. A man who has clearly thought out his subject, with a brain and a heart teeming with points of interest, will seldom fail to make himself understood.

So much for the skeleton or framework of letter-writing, and as the life-giving element will depend, to a great extent, on the purpose for which the letter is written, the subject must be considered under two general heads—business letters and letters of friendship.

In case of each be very particular in the matter of dating, giving every item distinctly and signing your full name. This will often insure the returning of valuable letters when lost, that otherwise might find a permanent abiding place in the Dead-Letter Office.

When the letter is purely one of business, let the sentences be brief, concise, and clear, bearing directly on the point. Nothing is more thoroughly disgusting to a man of business, whose time is money, than to be compelled to wade through pages of useless matter that he may know the simple thing wanted.

Letters of business should be promptly answered. The same principle holds good in letters to friends. All will agree that it is much easier to answer a letter immediately, when the chain of thought awakened by its reading is fresh in the mind, than to wait so long we are ashamed to write, and sometimes lose all traces of friendship by this utter neglectfulness.

With the last letter before you, tell your friend when it was received, then take up the topics in the order in which they shall naturally come, remembering to answer all questions that have been asked.

Letter-writing is simply conversing with friends on paper, and no better way can be mentioned than to consider the friend in your presence, and you the entertainer.

Do not consider anything too trivial to write about which you would think worth mentioning in conversation. Sometimes your friends will be much more interested in the narration of the little every day affairs, than by profound discourse on topics you know little about.

If you are writing to mother,—she who is always so interested in your welfare,—send a little journal of each day's doings, of the places visited, of the books read, of the friends met and acquaintances made, of the letters received from relatives and mutual friends. Don't be selfish if you are away from home visiting friends or attending school let the family share your good times and opportunities by the

frequent letters written home. Then, too, these frequent letters home are often a safe guard against the many temptations which surround the path of youth, tending to lure him from right and morality.

There are many other things which might be said, but this will do for the present. Two very good rules to remember in letter writing are, "Do not think what to write, but write what you think;" then the good old golden rule which is applicable at all times and in all places, "Do as you would be done by."

SLEEP AS A PREPARATION FOR STUDY.

BY BLANCHE E. HAYES, '94.

"Early to bed and early to rise
Makes a man healthy, wealthy, and wise."

EVER since we were old enough to understand the meaning of words, this old saying has been repeated for our benefit, time and time again, but never until now has its meaning been thrust upon us so forcibly.

The thought which is most important to us as a body of students is that by going early to bed, we prepare ourselves for hard studying, and shall thus become wise. No one can deny that in order to understand and learn the lessons he has been given, he must first be wide awake. When the mind is in a state of semi-consciousness, or half-sleep, as it were, it cannot grasp the facts presented to it so as to comprehend their full meaning.

It is only when the mind is in a state of perfect activity that it is capable of receiving and retaining knowledge. This is why we are always advised to study in the morning rather than late at night. One hour of solid study in the morning is worth three by lamp light.

It is a well known fact that the reason there is always so much ill-health among students is on account of the lack of sleep. But leaving out the "healthy" question in our proverb, we must admit that the best preparation for study is pure, wholesome sleep.

There is, too, a time for sleep. We may think that no matter how many late hours we keep, staying up to finish this or that bit of necessary work, we can easily "make it up," as we say, by one or two afternoon naps. True, these may help, but that kind of sleep does not do us half the good that it would at the right time. The proper time for sleep is at night, when all the world is quiet and in darkness. In the day there are a thousand and one noises to disturb and annoy the sleeper. There is no doubt that an afternoon nap is very refreshing and beneficial for the time being, but the sleep which really prepares us for our work is that taken at the natural time.

Did you ever feel so tired and sleepy that in reading a lesson the letters fairly danced before your eyes? And have you not then and there taken a five, ten, or even fifteen minutes nap? How refreshed you have felt, and how you have studied this or that lesson with renewed vigor, feeling that you would surely conquer it.

And yet it is not best to make a practice of taking afternoon naps. What we should practice, however, is keeping early hours. Trying it, we shall be surprised to find what a difference it makes in our capability for study.

We plan regular hours for study; why should we not do the same for sleep? We perhaps feel that we can easily steal a few hours from sleep to patch out our study hours, but we might better, I think, reverse the case and steal, if we may call it stealing, from our study hours to patch out our sleeping hours. We should then find ourselves capable of doing half again as much real work in the same length of time, and derive more benefit from it.

We cannot give too much thought to this subject, for it is one of the principal sources from which we receive our strength to continue our work and become successful students, and consequently successful men and women.

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Calendar.

1893-94:
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95:
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Dr. and Mrs. Mayo spent Thanksgiving Day with friends in Junction City.

Mrs. Breese has so far recovered as to be able to sit up a good part of the time.

Assistant Horticulturist Sears spent Thanksgiving Day at home in Saline County.

Prof. Mayo is moving into town. He will occupy the White cottage on Humboldt Street.

Olive Wilson, Third-year, is the happy owner of a new "Monarch" bicycle, a present from her father.

Belle Frisbie, '94, and Hortensia Harmon '95, took their Thanksgiving dinner with Miss Halstead, of Leonardville.

Pres. Fairchild addressed the meeting of the Golden Belt Teachers' Association at WaKeeney, last evening, on the subject, "The Art of Seeing."

Pres. Fairchild had as visitors last week, Mr. and Mrs. E. L. Hough, of Ypsilanti, Mich., who stopped on their way to California. Mrs. Hough is a niece of Pres. Fairchild.

Several students spent Thanksgiving Day at their homes, but the great majority partook of turkey at their boarding houses, preferring to wait until the holidays to visit the home folks.

The severe cold weather of Thursday put a stop to operations on the new buildings, and with a heavy snow storm in progress today (Saturday) it looks as if work would not soon be resumed.

The foot-ball team won a victory in the contest with the club of St. Mary's Academy on Thanksgiving Day, by a score of 18 to 10. A large number of visitors from College and city accompanied the team.

Mrs. Winchup reports that the Sewing Department finished 331 dress articles before the mid-term examination, which was held five weeks ago, and that at present the girls are working upon 51 different dresses and dress articles.

M. Raymond Vuigner, of Paris, spent the better part of the week at the College in an investigation of methods and equipment. M. Vuigner is a graduate of the Agricultural Institute of France, and is making a tour of this country in the interests of the husbandry of his native land.

Prof. Walters is engaged in experiments with the so-called black-printing process, a new process used for duplicating all kinds of drafts, especially shaded drawings. It differs from the blue-printing process in that it produces dark brown or black lines upon a white surface instead of white lines upon a dark blue one, and is but little more expensive or more difficult of manipulation.

In a circular announcement of the opening of the Brisbane Technical College we find the name of Mrs. E. M. Shelton as a member of the committee of management. Mrs. Shelton writes to this College to refresh her memory as to the work of the classes in Sewing and Hygiene. The Brisbane College will open with classes in these two branches. Household Economy will be taught next year.

A division of the Third-year Class presented declamations in Chapel yesterday afternoon, as follows: "Parasites," J. B. S. Norton; "The Army of Mercenaries," C. W. Pape; "The Nation and the Soldier," S. A. McDowell; "A Dream," Ethel Patten; "A Spartacus," C. A. Johnson; "Bill Nye's Spartacus," F. J. Smith; "Civil and Political Privileges for Women," C. D. McCauley; "A Legend," Maude Quintard. The exercises were enlivened by a vocal duet by Misses Lyman and Helder.

The Fall Term Social was held Wednesday evening. The entertainment in Chapel consisted of a comic opera in one act and two scenes, entitled "King Alfred." The characters, seven in number, were taken by the following students:—

Farmer Grubb.....E. L. Frowe
Dame Grubb.....Olive Wilson
Arabella Grubb.....Mary Lyman
King.....F. J. Smith
Dumplin.....J. V. Patten
Soldiers.....A. C. Cutler, H. Sharp

A most enjoyable feature was the singing of the verses of the opera to familiar airs, such as "Life on the Ocean Wave," "Grandfather's Clock," "Yankee Doodle," "I Dreamed that I Dwelled in Marble Halls," "Bob up Serenely," "After the Ball," etc. The members of the Fourth-year Class provided entertainment to the satisfaction of all—a host of electrical devices in the Sewing Rooms, a magic lantern show and an animated phonograph in Society Hall, a Gypsy fortune teller, and various other schemes.

The Weather for November.

Temperature.—The mean temperature for November, 1893, was 37.10°, which is 2.41° below normal. There have been twenty-five warmer and nine colder Novembers in the past thirty-six years. The maximum temperature was 79°, on the 1st; the minimum, 9°, on the 30th—a monthly range of 70°. The greatest range for one day was 53°, on the 4th; the least, 4°, on the 17th. The warmest day was the 1st, the mean being 55°; the coldest day was the 23rd, the mean being 16.75°. The mean of the observations at 7 A.M. was 29.60°; at 2 P.M., 50.67°; at 9 P.M., 34.07°. The mean of the maximums was 54.23°; of the minimums, 25.10°; the mean of these two being 39.66°. There were cold waves on the 11th, 17th, 22nd, 28th, and 30th.

Barometer.—The mean pressure for the month was 28.908, inches, which is .10 inch above normal. The maximum was 29.309 inches, at 2 P. M. 23rd; the minimum, 28.378 inches at 7 A.M. on the 21st—a monthly range of .931 inch.

Cloudiness.—There were two days entirely cloudy, one five-sixths cloudy, three two-thirds cloudy, one one-half cloudy, five one-third cloudy, three one-sixth cloudy and fifteen clear. The per cent of cloudiness was 25, which is 15 below normal.

Rainfall.—The total rainfall for the month was .81 inch, which is .54 inch below normal. There have been eleven Novembers with less rainfall in the past thirty-six years. Rain fell as follows: the 11th .43 inch, 20th .36 inch, 26th .02 inch. A light snow fell on the 11th and 28th.

Relative Humidity.—The relative humidity for the month was 84.40; at 7 A. M. 93.27; at 2 P. M. 69.93; and at 9 P. M. 90.00.

Wind.—The wind was from the south-west twenty-five times, north eighteen times, south thirteen times, west and north-west seven times, south-east five times, east twice, north-east once, and a calm twelve times. The total sum of wind for the month was 6915 miles, giving a mean daily velocity of 230.5 miles, and a mean hourly velocity of 9.6 miles. The maximum daily velocity was 467 miles, on the 16th; the minimum 48 miles, on the 3rd. The maximum hourly velocity was 38 miles, from 12 M. to 1 P. M. on the 16th.

Below will be found a comparison with the preceding Novembers:—

November.	Number of rains.	Rain in inches.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858.....	9	.69	.....	33.81	58	11	.....	.....	.....
1859.....	2	1.20	S	45.43	84	10	.....	.....	.....
1860.....	4	1.58	NW	36.93	68	10	.....	.....	.....
1861.....	2	.70	NW	42.26	74	16	.....	.....	.....
1862.....	3	1.70	N	43.42	72	23	.....	.....	.....
1863.....	4	2.23	SW	38.61	68	1	.....	.....	.....
1864.....	4	1.61	N	36.20	58	10	.....	.....	.....
1865.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1866.....	3	1.37	W	45.65	81	20	.....	.....	.....
1867.....	2	.49	W	44.48	96	7	.....	.....	.....
1868.....	5	2.17	SW	38.08	62	16	.....	.....	.....
1869.....	5	1.19	SE	36.88	65	20	28.77	29.20	28.30
1870.....	2	.13	SW	44.80	74	17	.....	.....	.....
1871.....	5	1.96	SW	36.90	72	4	.....	.....	.....
1872.....	0	.00	NW	33.68	70	2	.....	.....	.....
1873.....	2	.82	SW	41.63	79	12	28.71	29.06	28.17
1874.....	5	2.12	SW	38.59	78	3	28.77	29.28	28.00
1875.....	3	.34	SE	35.97	70	2	28.81	29.45	28.32
1876.....	2	1.75	NW	37.15	70	0	28.85	29.50	28.36
1877.....	6	1.90	NW	38.70	65	2	28.80	29.31	28.45
1878.....	2	1.90	NE	43.44	75	15	28.77	29.12	28.25
1879.....	6	7.83	S	42.72	70	15	28.63	29.25	28.18
1880.....	4	1.97	SW	31.09	67	7	28.74	29.21	28.25
1881.....	3	1.86	SW	39.24	68	7	28.70	29.11	28.17
1882.....	3	.95	SW	40.56	79	15	28.79	29.09	28.39
1883.....	1	.30	SW	41.45	69	11	28.69	29.23	28.06
1884.....	2	1.07	N	42.33	70	12	28.60	28.90	28.15
1885.....	1	.19	SW	42.78	84	22	28.63	29.02	28.43
1886.....	2	1.24	SW	39.09	79	12	28.52	29.35	28.34
1887.....	1	.29	N	40.85	85	9	29.10	29.60	28.69
1888.....	2	.94	N	37.33	78	14	29.05	29.47	28.61
1889.....	4	2.23	N	35.17	66	11	29.03	29.52	28.51
1890.....	2	.91	SW	41.94	76	16	29.02	29.53	28.49
1891.....	5	.26	SW	38.69	86	8	28.93	29.51	28.41
1892.....	1	.65	SW	39.77	72	13	28.90	29.32	28.48
1893.....	3	.81	SW	37.10	79	10	28.91	29.31	28.39
Means.....	3	1.35	SW	39.51	73	10	28.81	29.29	28.33

WIND RECORD.

November.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889.....	5477	182.84	344	47	7.62	26
1890.....	5938	197.93	334	51	8.25	26
1891.....	7938	264.60	529	64	11.03	36
1892.....	7955	265.17	570	94	11.05	43
1893.....	6915	230.50	467	48	9.60	38
Means.....	6845	228.21	449	61	9.51	34

E. R. NICHOLS, Observer.

GRADUATES AND FORMER STUDENTS.

W. E. Smith, '93, was a visitor on Friday.
Nora Newell, '93, visited classes on Monday.
Winnie Houghton was about College Friday.
Miss Bertha Spohr greeted college friends Friday afternoon.
Jean Frowe, '94, spent Thanksgiving at home near Louisville, Kansas.
Eusebia Knipe, '90, took advantage of a vacation in the city schools to visit the College on Friday.
G. W. Smith having dismissed his school for vacation on Thursday and Friday, was enabled to visit

the Thanksgiving social and also classes on Friday.

R. S. Reed, '92, is on the program of the Chase County Teachers' Association at the Elmdale meeting.

Dora Thompson, Third-year in 1892-3, is visiting with College friends, and will enter classes at the beginning of the Winter Term.

Josie Finley, Second-year in 1892-3, visited College on Friday, having just returned from California. She will enter classes next term.

A daughter was born, November 28th, to W. J. G. Burtis, '87, and Winfred Brown-Burtis, Third-year in 1887-8, at their home in Fredonia.

J. E. Dorman, Second-year in 1890-1, until recently employed on Ellerslie Farm under Supt. Cottrell, '84, is called to Trenton, N. J., to plan a dairy building and act as butter-maker.

Annie Cowell, student in 1884-5, visited the College last week to find a few old friends. Miss Cowell has been at her home in England for several years, and will return there next spring.

G. W. Smith, '93, and J. E. Thackrey, '93, have been "remembered" by the ladies of the M. E. church for their efficient work in drilling the young ladies for the recent trades display.

Lawrence Poirier, who attended College in 1879-80, writes from Wathena, Brown County, that he is conducting a successful business in dry goods, notions, furnishing goods, boots and shoes, groceries, etc.

H. M. Cottrell, '84, writes in a letter to his father that the new dairy barn on Ellerslie Stock Farm, Mr. Morton's country place on the Hudson, is almost completed, and will be a model of its kind. Profiting by his experience in the fire which a short time since destroyed the old barn and many fine animals, Supt. Cottrell has devised an unhitching device which will simultaneously release the cattle by action of a lever placed outside the barn. Mr. Morton is in Europe, where he will probably buy a herd of Guernseys to take the place of the animals lost in the fire.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith. **Ionian Society.**—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembly; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

November 25th.

The Webster Society was called to order by Pres. Ames. Roll-call was responded to by most of the members. Prayer by B. F. S. Royer. Minutes of the two previous meetings read and adopted. H. O. Rhodes and Mr. Lee were elected members. Debate, "Resolved, That the accumulation of wealth is moral folly." The affirmative was presented by Messrs. Vincent and Dolby; the negative by Messrs. Forsyth and Meyers. A well-rendered declamation by M. B. Williams followed. The vocal solo by S. G. Britton showed that there is still some music in the Society. Declamation by E. A. Eggleston. Mr. Richardson reviewed the week's news; and, after recess, D. C. Arnold and E. C. Trembly discussed the introduction of the languages into our College. After general business, the Society adjourned.

D. C. A.

November 24th.

The Alpha Beta Society was called to order soon after chapel, Pres. G. L. Christensen in the chair. Program opened with a trio, "Rosés," by Messrs. Harling, Spalding, and Ridenour. Devotion by D. Timbers. G. L. Christensen delivered an excellent oration on "Reforms." Select reading by Etta Ridenour, "Cheerfulness," was followed by a discussion of the Bryant and Longfellow question, argued on the affirmative by O. H. Halstead and Jennie Ridenour. J. M. Westgate and Mary Painter presented the negative. The early life and education of the poets in question were discussed by both sides. Many of the most important poems of the two poets were mentioned and their qualities critically inspected. The debate was punctuated with recitations by the contestants from their favorite poet. The affirmative claimed that as Bryant was the father of American poetry, original in its truest sense, the poetry of nature, characterized by simplicity and brevity of expression, he must stand at the head of America's poets. The negative claimed that the greatest man was the man that did the most good. Longfellow did this by touching, with his poems, the hearts of the people. His field was extensive. He wrote poems for all classes, and they were bettered by them. As a poetical historian, he was greatly

Bryant's superior. His poems "Evangeline" and "Hiawatha" showed this. As a translator of poetry, he is acknowledged to have no equal. The judges gave their decision in favor of the negative. The Gleaner, presented by Sarah Cottrell, was an interesting edition. Regent Secrest, being present, was called upon for a speech, and cheerfully responded. He gave an interesting description of the debating society of forty years ago, in which he took an active part, and of the old log school house in western Ohio, in which they used to meet. The questions debated, such as, "Which is the most useful to man, his dog or his gun?" were of vital importance to the frontiersman, and aroused his latent oratorical powers. Told us how instead of the buggy or cart the horse was used, was persuaded to carry double. He closed with many good suggestions and best wishes for the future success of the Society. The Society extended to Regent Secrest a most hearty vote of thanks. After recess extemporaneous speaking was generally indulged in.

A. E. R.

November 25th.

The Hamiltons were called to order at 7:30 by President W. O. Staver. Prayer, F. A. Dawley. C. S. Pope, marshal pro tem, administered the oath of membership to the new members. The program of the evening was opened by J. C. Bayless with the "Mad Man," the title of his declamation, followed by "The Nile," title of C. M. Gillece's well-written essay. The debate was next taken up. "Resolved, That Agriculture has done more for civilization than commerce." Argued on the affirmative by C. R. Hutchings and C. S. Marty; on the negative, by E. L. Frowe and F. W. McQuaid. The debate was long and interesting, each speaker exhibiting a great deal of ingenuity and skill in presenting his side of the case to the Society. The Society was called upon to decide which side had won the question, when the negative received the largest number of votes. The Music Committee, H. G. Johnston and E. L. Frowe, then entertained the Society with music. M. V. Hester's number of the Recorder was read by W. I. Joss. R. J. Whitson delivered a declamation in a very acceptable manner. E. O. Noble gave an interesting discussion, which was well prepared and presented in an attractive manner.

F. Y.

November 25th.

The Ionian Society was called to order by President Lyman, and after the usual devotion, a special program was rendered before a large audience. Under the election and initiation of members, the names of Misses Waugh and Dill were added to the roll. The program consisted of the usual literary work done in the Society, and was opened by an oration on "Wit and Humor," by Miss Helder, who in spite of a very sore throat managed to draw a smile now and then from her audience. The Misses Walters rendered a delightful duet on mandolin and guitar, and as usual they received a hearty encore. Miss Corbett read an excellent edition of the Oracle, which was so filled with other matter of various kinds that there was no room for an editorial. Misses Grout, Eakin, Spohr, and Selby delighted the audience with a comic quartette in which Miss Eakin did some first-rate whistling. The debate, "Should cremation supercede interment?" was given in an interesting way by Misses McKeen and Turner on the affirmative and Miss Hartley and Frisbie on the negative. The former held that the germs arising from the decay of corpses is one of the great sources of contagious diseases, and this danger might be greatly if not entirely avoided by the cremation of the bodies. The latter argued that these dangerous effects of interment might be done away with if the proper attention were paid to the laws which provide for the depth of interment. Miss Turner gave a very good description of a crematory, and in her delightful manner, held well the attention of the audience, and dispelled much of the horror that hovers around the idea of burning our loved ones. The Judges, Mrs. Kedzie, Miss Horn, and Prof. Walters decided unanimously in favor of the affirmative. Miss Wilson followed the debate with an instrumental solo which was very much appreciated. Miss Copeland delivered an Indian Legend in a manner that was a credit to her. Miss Swingle gave the visitors a neat little toast which was responded to by Mr. Donaven, a Webster, in a witty and pleasing talk. A trio by the Misses Lyman and Spohr closed the program which was highly appreciated by all. After routine business, the Society adjourned, and the friends and visitors departed, all feeling better for having been fortunate enough to attend the session.

ANON.

The cockle burr is an eloquent preacher these days. It tells of neglected opportunities in the corn field more convincingly than any orator on the hustings, because it tells the simple truth. There is no possibility of dodging the issue that it raises, or of laying the blame on the opposition party. It is there in all its hideousness, and proclaims a farmer who is not up to the demands of the times.—*Live-Stock Indicator*.

Do you think there is any profit in hauling your wheat to town and selling it at the present low prices, and then buying bran and hauling it home to feed, sagely says an exchange. Wheat itself is a good stock feed, and if there is any profit in using it that way do not let any prejudice against it stand in your way.—*Baltimore Sun*.

The farmer necessarily lives so much in the future that plans for work must be laid out months in advance, and during the year note is to be taken for necessary work as soon as the crops are gathered in. The soil cannot do its share producing crops if it is wet.—*American Dairyman*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Ottawa University is enjoying a larger attendance than ever before.

The Kansas City *Star* announces that "the State University Glee Club will break out in about two weeks."

The fine piano which was in the Kansas World's Fair building was given to the Girl's Industrial school at Beloit, by the Bent Piano company, of Chicago.

The weekly Washburn College *Mid-Continent* has been changed into a monthly and has absorbed the *Argo-Reporter*. The first number is a very handsome one.

Bishop H. Vincent, the organizer of the Chautauqua Circle, has been asked and has consented to address the State Teachers' Association at Topeka on the evening of December 27th. His address will be "Tom and His Teachers."

The Topeka *Capital*, in its report of rewards to Kansas schools by the Columbian Exposition, gets things considerably mixed as far as the State Institutions are concerned. The *INDUSTRIALIST* knows from headquarters that there are two mistakes in the list, and it looks very much as if there were several others.

Delegates from the colleges in the State Oratorical Contest met Saturday and chose the judges and alternates for the State contest, which is to be held February 23rd. The judges, as chosen, are: On delivery, Hon. J. W. Ady of Newton, J. R. Burton of Abilene, E. W. Hoch of Marion; on thought and composition, Judge Earl of McPherson, Prof. Naylor of Wichita, and Dr. Spencer of Sterling. Six alternates were chosen for delivery, and six for thought and composition.

The school board in each district should furnish pens, ink, paper for writing and paper for examination for the use of the school. Teachers are often annoyed by pupils not being able to perform the work required of them because of the need of these. Frequently parents are not able to buy these things when needed, or neglect to do so, and as a result, the child suffers the loss of time. A number of districts in the county furnish this material, and we believe it should be done by all.—*District School*.

At the meeting held at Edwardsville, Wyandotte County, last week, under call of the county Superintendent to discuss measures relating to the betterment of the district schools, State Senator Edward Taylor made an enthusiastic speech in favor of the passage of a free text-book law. The school building was crowded with school children and their patrons, who showed that they were all interested in better education. Senator Taylor declared that the educational interest of the community should be made first in importance, and while the schools were maintained at public expense by taxation the text books should be provided in the same manner. Edwardsville, he thought, had nothing to complain of under the present system, but there were many children of school age in the county as well as in the State who should be provided with text-books free.

Prof. E. Miller, in the Lane University *Oracle*, writes the following concerning a common waste of educational energy: "Some years ago a prominent clergyman of this city traveled over the State looking after the interests of his denomination. Every country town was found to be a railroad center, and absolutely certain that the Rock Island would be there early in the autumn. What the reverend gentleman found to be true concerning the railroads, he might have found to be correspondingly true with regard to the church colleges of the State. Almost every town of one thousand or more inhabitants has a college or two, and calls itself the Athens of Kansas. To secure a college, an ambitious town will furnish the site, worth from five to ten thousand dollars, and a building worth from fifteen to fifty thousand dollars; some anxious church people will endow it with perhaps forty or fifty thousand dollars to be paid in installments; a faculty of half a dozen men and women, more or less, will be elected and brought together to set the wheels in motion, live on starvation salaries, and take their pay in town lots worth from fifty to one hundred dollars each. Colleges under denominational control are to be found in many places just alive and no more, and anxiously waiting for 'something to turn up,' or some rich man or rich woman to die and leave a legacy for the 'poor thing' before it fades entirely from view. When will the church authorities manifest some common sense in this as in the ordinary business matters of life? Just think of it; here are five or six colleges planted by a single denomination in different parts of the State, each with a poorly paid faculty, and a small body of students, with no apparatus, no library, no museums, no endowment, and no other source of income; simply a pauper dependent upon charity. Why, in the name of common sense, should any denomination, however strong, be called upon to squander money and moral support upon so many sickly, puny infants? It would be infinitely better and more to the credit of the churches if all the members of each church in Kansas would rally to the support of one good and strong institution of learning, build it up, give it a large and strong faculty of capable educators, endow it liberally, equip it with laboratories, museums, library, apparatus of all kinds, and erect for it beautiful and commodious buildings. The lesson would be a good one to be learned by all the churches in Kansas. Let sectional jealousy and ambition give way to our earnest and laudable desire to have the best, to stand by it and defend it to the last. If each denomination had but one college in Kansas, and would operate it for the good of the educational and spiritual interest of the people, what tremendous power for good church colleges would be."

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

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The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.
Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

SYSTEMATIC GYMNASTICS VS. FOOTBALL.

BY PROF. J. D. WALTERS.

THE football season is drawing to a close, the shouts and yells are dying away, the bruised shins and broken ribs are beginning to heal, bets are not offered or taken as recklessly as they were a few weeks ago, and there is a wholesome calm settling over the great football centers that permits the asking of the pertinent questions, What good is there in the game? *Qui bono?*

The press gives the following answers:—

Philadelphia Press: There are good grounds for protest against the brutalities of football when players kick the bucket instead of the ball.

Wheeling Intelligencer: Remember, young gentlemen, that legitimate football is not played with rooster spurs or five-ounce gloves. It is possible to knock the life out of a good thing.

Milwaukee Wisconsin: The rules for the playing of football should include regulations for an ambulance corps and a cessation of hostilities while the victims of rushes are carried from the field.

Washington Post: Meanwhile it would seem the rankest infatuation to harbor the theory that football is a more gentlemanly and a less demoralizing practice than prize fighting. The record indicates the contrary.

Kansas City Star: Football is the sole amusement in the world that carries with it the semblance and excitement of the great game of war. The first inquiry after a match is, "Who won the victory?" The next is concerning the number of killed and wounded.

New York World: On the other hand, true courage is not prompted by wanton foolhardiness, and if the element of special danger is necessary to its popularity the sport caters to and cultivates brutal tastes. It deserves to be classed with prize fights and bull fights, which are condemned as cruel and brutalizing.

Chicago Advance: How much money "changed hands" over the recent great collegiate football games in the East, we do not know, but the dispatches, which are no doubt true, state that the sum mounted into the thousands. That many of these gamblers were students in the colleges taking part in the contests there is, also, unfortunately, no uncertainty. This is at present the most serious feature of these events. Danger to life and limb there may be; but the danger to the moral life from these race-track and prize-fight ethics, which are now such an overshadowing feature of the games, is something so serious that it is a wonder the faculties take so little notice of it.

Other people beside the *Advance* have wondered that the faculties have taken so little notice of it, or rather they have wondered that many faculties have taken notice of it to the extent of permitting football teams to absent themselves for days at a time to make contest tours through several States, or of dismissing classes to witness games or to receive victorious elevens at the depot. It has remained for a Kansas paper to give us a clue to the inwardness of the attitude of some of the faculties. The *Vox Studentium* of the Southwest Kansas College at Winfield contains the following definition of the purpose of football contests by teams from educational institutions. It is probably true enough, but it is a sad commentary on the tendencies of our times:—

Athletics are now considered an essential element in all first-class schools. The intercollegiate games which are a natural outgrowth have gained such prominence and have become so associated with our colleges and universities that fully half of the young people preparing to enter college make choice of a school according to its athletic reputation, or, as has been said by a prominent writer, "choice is made according to the outcome of the Thanksgiving Day football game." There are some who say that such a condition of things is not to be desired, yet such is the tendency of the times; and it is not to be denied that students are attracted to such schools, and, whenever they have matriculated, they usually remain for a full course. Let the Southwest Kansas College gain proficiency in athletics and demonstrate the fact that they are competent to cope with any of the schools of the state, and students from surrounding towns will not pass her by and go to the State University and to Baker. Neither of these schools can boast of superior instruction to that given at Winfield, nor can the latter school produce equal facilities, yet there is a spirit that pervades the student body which wins for those schools a place in the hearts of the people of the State. The fact that Baker has for two years beaten the Kansas University at football will do more toward increasing her attendance than an extended advertisement of literary advantages. The success of Kansas University also in football, the past two years, has spread her fame farther and attracted more students than all of Chancellor Snow's experiments upon the chinch-bug or the fact that Prof. Dyche has the finest collection of mounted animals in the United States.

The Faculty of the University of California are considering an order prohibiting intercollegiate football contests. Besides deploring the roughness of the game and the interference it causes with the studies of the students, the Faculty say the effect on the spectators is similar to that produced by witnessing a bull fight; and football has become a business, not a sport.

At a meeting of the Overseers of Harvard College the following petition was presented to the Board:—

The wide difference in opinion which exists as to the merits and demerits of the game of football as now developed and played by collegians, leads the undersigned to request the Board of Overseers to cause full statistics to be gathered and compiled and a thorough investigation conducted so that the appropriate attitude of the government of our University to the game may be wisely determined, so that if practicable modifications of the game calculat-

ed to lessen its dangers may be suggested, and so that parents and sons in college or preparing for college may have the benefit of the results of a thorough and judicial inquiry by a competent committee.

From several other institutions come similar reports proving that a reaction has set in which in another season will probably become strong enough to place the game among the sports of the past. Yet the question has another side to it: The students need physical exercise, and they are likely to select the mode of it unless something that will meet their wants is provided for them. What shall it be? The colleges and universities of Central Europe have solved the problem forty years ago by providing systematic gymnastics taught by teachers who are educators and hygienists. The German system of physical training, which has already been introduced into many American schools, among them West Point Military Academy and the Annapolis Naval Academy, trains the whole set of bodily faculties. It does not aspire to the cultivation of one special branch. Sports, athletics, or acrobatics are excluded, as well as emulative rivalries to gratify ambition, to exhibit a show, or to pursue remunerative professions. Prof. E. M. Hartwell, Ph. D., M. D., of Johns Hopkins University, Baltimore, in his work on "Physical Training in American Colleges and Universities," written for the National Bureau of Education, says: "There can be no doubt that the German system, in its wise mingling of theory and practice, exhibits the happiest, yes, the most adequate solution of the great problem with which pedagogues have been busy since Rousseau, a truth which is now hardly contested, but the physiological principle of which but few are beginning to understand."

The tendency of gymnastics is toward true culture; that of athletics, away from true culture.

"GOOD ENOUGH."

BY J. F. ODLE, '94.

WE often hear this expression applied to things of very inferior quality. Many times a task is performed by one person, and some other person who is perhaps unable to judge is ready to pronounce it "good enough," although the workmanship may be of poor quality and far below the ability of the workman. Yet such a judgment is often considered sufficient reason for letting the job pass. One may even aim to perform his work in such a manner that it will barely pass, and never be of any special credit to him. Such work is no aid, but rather a hindrance, to progress.

Among students, we occasionally find one who studies just enough to pass examinations.

With such, a grade of seventy, or seventy-five at the highest, is "good enough." But to that student there comes a time, sooner or later, when a passing grade is not reached. He may be able to pass all examinations and receive his diploma. But when it comes to the actual test of life he will find that there is something lacking, and that his education is not what it should and might be, had he aimed at perfection instead of "good enough."

A farmer may be tempted to slight his work because some of his neighbors perhaps have pronounced it "good enough." His corn may be clean and the ground loose at two cultivations, and he may be induced to think that sufficient, and all other work put on it to be of no avail. He may feel sure that he has a fair prospect for a crop. But if he will tend his crop a little better than "good enough," the harvest will often result in large pay for the extra work. We do not mean that he should work on the "penny wise and pound foolish" plan, and do five dollars' worth of work with hopes of getting one dollar in return, but that he should use judgment in the amount of work he performs.

In the way the stock is cared for, we find this same "good-enough" idea. One man is not satisfied unless his stock is well sheltered and well fed; another will be contented with any construction that he can call a shelter, and will take no pains to see that the stock have plenty of good feed. Another will tell you that a few trees, a fence, or even a hillside, is good enough shelter, and that anything that the stock will eat is good enough feed. He will say that he has wintered stock that way before, and they didn't all die, either. The kind of shelter, the quality and quantity of the feed, the value of the stock, and the size of the owner's pocket book generally go hand in hand.

We do not mean to single out the student and the farmer as illustrative because they are worse than other people, but have taken them as examples because

we are more familiar with them. We believe that in all vocations there is a great deal of the "good-enough" element present, and in every case it has the same bad effect. The results of such work will always be unsatisfactory. "Good enough" furnishes no incentive to put forth the strongest effort, but has been well termed "the eternal enemy of best."

WOUNDS INFLICTED BY MILITARY RIFLES OF SMALL CALIBRE.

BY PROF. EDWIN B. BOLTON,
(Captain 23rd Infantry, U. S. A.)

THERE has always been a constant tendency on the part of military ordnance manufacturers to decrease the calibre of the soldier's gun, until the attention of the civilized world is, at the present day, centered on a discussion by surgeons of all nations as to the character of wounds made by modern rifles, whose bores range between twenty-one and thirty-hundredths of an inch in diameter, as compared with those of larger calibre which were formerly used.

It is asserted that the character of the wound has changed, which change is ascribed to the very small size of the bullet projected. Some claim that the nature of these wounds are providently humane to the extent that the injury inflicted disables an enemy just sufficiently long to render him *hors du combat*,—like a bee shorn of its sting,—with no malice towards the victim other than to deprive him, for the time being, of any power to inflict an injury in return. Others claim the opposite of this beautiful attribute; contending that the wound is more malignant in the severity of its nature than those inflicted by the blundering old arquebuse.

Barring all wounds in the vital organs, such as heart, brain, and stomach, which always prove fatal, and speaking generally for the majority of cases, each of these claims may perhaps be correct, depending on the nature of the particular wounds they have each been observing—whether flesh only, or bone also; but the explanation of the change will probably be found to exist in the science of impact, due to greater velocity which the high explosives now impart to projectiles, rather than in the fact of reduction in diameter only.

To understand and thoroughly appreciate the scientific grounds of this theory, it will be necessary to review the various and progressive though interesting stages of growth in velocity of projectile, as well as decrease in diameter of bore which have continued uninterruptedly from the earliest days of the invention of guns, when the calibre was over an inch in diameter, down to the present day, when it ranges from twenty-one to thirty-hundredths of an inch in diameter.

The objects sought primarily in this improvement in velocity and reduction in diameter were to increase the range and accuracy of fire, and to enable the soldier to fire a greater number of shots without increasing the cost of material, or the weight which he was accustomed to carry; but it was soon observed that these, together with the improvements in the manufacture of the gun itself, wrought wonderful changes in battle-field maneuvers as well.

Reverting, then, to the diameter of the bore in the days of the old match and flintlock muskets (whose size was necessitated by a philosophic principle which need not be elaborated here, rather than by chance), we observe that so much of the force of the explosion was lost by the escape of the gas through the touch hole, or vent, that the projectile could not be driven very rapidly out of the muzzle of the gun, and not having much velocity at that point, of course, it did not go a great distance from the gun before it struck the ground (because a bullet will fall as rapidly to the ground when in horizontal flight, as if let fall from the hand at a state of rest). The projectile being large, and not of great velocity, its tendency was to bruise, or mash, rather than penetrate the flesh.

The invention of the percussion cap, and the resting of the hammer on the small vent, prevented the loss of force through the escape of gas; and improvement in the strength of powder gave so much greater muzzle velocity that the same, or better, effect could be obtained by decreasing the size of the bore, which was done to something less than an inch in diameter; but the character of the wound was still that of a bruise, or mash, rather than penetration.

The introduction of grooves in the bore led to the adoption of an oblong bullet, which, owing to a rotary motion the spiral shape of grooves imparted, gave to the projectile greater range and gimlet penetration. The character of this wound was a penetration of the flesh, attended with more or less bruising and lacerating; but the velocity was of that nature which tended to break, or fracture, the bones, rather than penetrate them.

The introduction of metallic cartridges, simplified

breech mechanism, and improvement in the strength, as well as character, of the explosive material,—all tended to simplify the method of loading and increase the muzzle velocity; which, of course, satisfied a desire for a greater number of rounds without increasing cost in the amount of material used or weight in the number of cartridges carried. The muzzle velocity imparted to a bullet by the best black rifle powder when fired from the Army Springfield rifle, calibre forty-five, is about 1300 feet per second, and horizontal range about 200 yards. The wound made in the flesh may be compared to the hole made by a nail driven into green wood; it bruises and lacerates and pushes the fibres to one side, only to close up again when the nail is withdrawn. The bone, if struck, owing to comparatively slow velocity in projectile, is broken or fractured rather than penetrated. In these two cases, the bone, being broken or fractured only, may knit together again; while the flesh closes up the hole made and permits a free discharge of pus, which in itself prevents the wound from healing.

The muzzle velocity imparted to a bullet by the high explosive smokeless powder when fired from the Krag-Jorgenson rifle, calibre thirty, is about 2000 feet per second, and horizontal range about 600 yards. This velocity is so great, and the projectile having a great rotary motion, too, it cuts through both flesh and bone like an auger boring through wood. The flesh in this case does not close up the hole and stop the flow of pus; lint affords a free discharge, permitting nature to heal itself. The bone, not being broken or fractured, but bored, the powdered bits removed, cannot heal.

CITY OR COUNTRY LIFE—WHICH?

BY M. V. HESTER, '94.

A GREAT deal is being said of late years in many of the newspapers, essays, and rhetorical work about the undesirable condition of farmers, the agricultural interests in general, and the common level of life on which these people are placed, physically, mentally, and socially.

Indeed the times are hard, the crops were poor this year, and the legislative bodies seem to be discriminating in favor of other interests than farmers'. But on the other hand, let us think a little about those who inhabit the municipal districts. Notwithstanding the fact that the cities are becoming more crowded every year, and the per cent of farmers is getting smaller all the time, is it all genuine satisfaction in the cities and towns? Think of the poorest classes, the moving masses of men, women, and children, who live from day to day, year after year, and one generation after another, with never enough to eat, and who never have warm, comfortable clothes. These people must live, and most people prefer honesty to crime; but where there is no chance to live by honest means, they must steal, rob, or starve. In this way how many millions of people struggle through a miserable life-time in the back-grounds of the cities and towns? Of course these are the poorest and meanest conditions of city life, but we are sure that none living in the country fare worse than these.

A second division, the middle classes of people, might possibly bear a slight comparison to those living in the country; that is, with the day laborers and the farmhands in general. Let us see. What kind of lives do these lead? These men, young or old, high or low, are employed to work for wages—a dollar-and-a-quarter a day, thirty dollars to seventy-five or eighty dollars per month, or perhaps they get from \$300 to \$1500 a year. Well, do they have any better home for financial success, or easy, wholesome lives than people living in the country? No, whether they are young or old, high or low, they are working for wealthy men, or corporations without souls. They are constantly subject to some body else's orders, and in many lines of business are subject to very strict rules of conduct. Then at any time they are liable to be discharged to hunt another position.

One year after another goes by, and they are no better off, financially, than when they started. There is constantly a big house rent to pay, and butter, eggs, sugar, fruit, and flour are always to be bought. Winter and summer the majority of them must earn their daily or monthly wages or very soon be in straitened circumstances.

Then we come to the wealthy classes. Here we will surely find the most desirable conditions of city life. The man who has plenty of money in the city may live with a great deal of luxury, splendor, and a great deal of happiness. He is independent. His family move in circles of their choice. And of course theirs are the positions to be envied by all others in the world.

But here again we believe the family of means in

the country enjoys equally enviable distinctions without the attending undesirable circumstances of the former. The man in the marble palace would not dare to sleep one night without every door being securely locked. He is afraid to travel in the dark. The street-lamp on the corner is a necessity for his safety. His children marry and are given in marriage according to position in society. And many times what wretchedness results!

Then I believe that as people go through life but once, most of them really have desires for other enjoyments than what they eat and wear. Besides financial and industrial considerations, they have social and moral natures to be cultivated or suppressed. In these respects I believe city and town life is very inferior to that of the country.

Contrast, if you please, a half-dozen little boys going home from school after four o'clock. The town boys walk briskly along to a fruit-stand, steal a few apples, sneak into an alley, and divide the spoils. The next evening they have some cigarettes. They go at once to the back-alley, and there, besides smoking, learn in the merest childhood the ways of sin and corruption. The little country boys and girls go loitering along, perhaps in their innocent, simple sports, and certainly grow up to be by far purer and happier children. How much vice children learn by bad company on the streets, in the alleys, mills, factories, and other places for which they cannot be responsible.

The same holds true largely with the man. The poorest man, the middle classes, the highest ranks, the foreigner and the native born, the educated and uncivilized, the good and the vile, are constantly rubbing elbows on the streets. Oh, the necessarily cold rules of street conduct! If a man should be lying dead-drunk by the side-walk with the sun pouring in his face, the passers-by must not pay any attention to him, because it is none of their business. Since a man is a part of all that surrounds him, how much better the chances and easier it is, really, to live a Christian life in the country than on the crowded street. Then, to sum it all up, we believe the financial and industrial circumstances are equally as good for the bulk of the people in the country as in the cities, while healthful, social, moral, and religious privileges are far superior.

INDIVIDUALITY.

BY MIRIAM SWINGLE, '95.

HOW often in this age of progress we meet with the person of seemingly no individuality! He is entirely governed by the opinions of others and the established customs of the age, right or wrong.

If a fault in any of the courses he is pursuing with others is pointed out to him, instead of being the first to rectify the mistake, he says that since it is contrary to the prevailing idea it is impossible to change the belief of the people in regard to it. If invited into some new undertaking which is right, instead of doing his part towards promoting such a plan, he meets it with opposition on the ground that, as there are contrary opinions existing, it is useless to even try to bring forward such an idea; and, however right, he will not help in promoting the thought.

Such a character is a great detriment to all who come in contact with him, for he is working against one of the greatest means by which progress is attained. Who does not admire the person who, when a new truth by which the world might be greatly benefited, is presented to him, is ready to stand by the cause against the world? What he believes is true, he tries to explain regardless of the contempt with which he is looked upon. The person of great individuality is not ashamed of his opinions, upon the subject of religion, or in fact upon any subject,—popular or not. He does not try to hide his feelings and actions, but comes out openly and faces the storm that is sure to sweep towards and over him.

Galileo's ideas as to the fact that the earth moves were met with strong opposition, and at one time, when weak with childishness of old age, he was made to denounce his beliefs; but he had enough of the spirit of individuality left in his withering mind to whisper afterwards, under his breath, "But nevertheless it does move."

We as students are apt to have too little charity towards the opinions of others, especially if they are contrary to the belief which we have been taught to accept. Of course this is perfectly natural; but we should have a due regard for the thoughts of others, since, perhaps, these things which seem impossible to us will sometimes be proved true.

The person of marked independence should not be scorned, as he oftentimes is, but should be highly respected for his sincerity.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

A temporary hitching rack has been built east of Science Hall.

The class stone of '93 is in place in the north wall of Science Hall.

Ellen Halstead, Second-year in 1892-3, was a guest of the Alpha Betas last evening.

Prof. Georgeson attended the State Dairy Association on Thursday, and read a paper.

The Farmers' Lecture Course begins on February 6th. Thirty-six lectures upon farm topics are open to all.

Pres. Fairchild is lecturing to the Senior Class on human rights and duties, and principles of government.

Prof. Mason represented the College at the annual meeting of the State Horticultural Society at Holton this week.

Prof. Lantz is chosen Treasurer of the North Central Teachers' Association, which held a meeting at Concordia last week.

Secretary Graham contributed a paper to the programme of the State Dairy Association this week, but was not able to attend.

Fourth-years are searching the library for facts and opinions bearing upon the forty-seven theses in Psychology which they are to have ready at the close of the term.

The neat cover design for the Alpha Beta programs consisted of the two words "Alpha Beta," engraved in fac simile of the handwriting of J. C. Christensen, Fourth-year.

The *Grange Visitor* of December 1st has an interesting article from the pen of Mrs. Mayo, giving an account of the work in this College under the title "A Practical School for Girls."

The large smokestack of the steam plant is nearing completion. The brick work will be finished today, and the heavy iron cap, weighing a ton, is to be placed in position the first of next week.

Regent Wheeler, Treasurer of the College, spent Thursday afternoon in looking over accounts at the College and in the bank. He has spent a part of the week in attendance upon the meeting of the State Dairy Association at Topeka.

Captain Bolton has been kept from his duties all the week by a severe attack of influenza. His classes have been cared for by Professors Lantz and Nichols, and the drill has been under direction of Capt. Williams and Sergt. Cavanaugh.

There are but two weeks more of the fourteen of the Fall Term. The vacation of more than two weeks ought to be used to the best possible advantage in preparation for the uninterrupted course of twenty-two weeks of the Winter and Spring Terms.

The Short Course of lectures for farmers this winter will begin on Tuesday, February 6th, and continue until Saturday, February 17th, with three lectures each day besides some six evening lectures. The list of topics will be given upon application, with information as to board, etc. A large attendance is confidently hoped for.

Prof. Georgeson has had the pleasure this week of a visit from a college classmate, Mr. J. L. Thomas of Junction City, who with his wife and little son spent part of Wednesday and Thursday at the home of the Professor. Mr. Thomas is the successful manager of the alliance store in Junction City, where he has lived since graduating from the Michigan Agricultural College in 1878.

The Fourth Division of the Senior Class appeared in Chapel Friday afternoon with orations as follows: J. F. Odle, "Some Reasons of our National Greatness;" Mary Lyman, "Wordsworth and Nature;" C. R. Pearson, "Irrigation of the West;" Minnie Romick, "Social Life;" V. I. Sandt, "Behind Time;" Winnie Romick, "Whittier's Home;" J. A. Scheel, "Jerusalem and the Jews;" C. C. Smith, "Creation."

Professor Lantz of this College, who attended the Thanksgiving session of the Northwest Kansas Teachers' Association at Concordia, reports that the meetings were attended by about 400 teachers, that the programme was well carried out, and that the musical interludes were unusually fine. Mrs. A. L. Bates of Concordia was elected President and Miss Etta Cross of Osborne, Secretary. Miss Lotta Molthop of Concordia won in the declamatory contest.

Prof. A. J. Cook, for twenty-seven years past Professor of Zoology and Entomology in the Michigan Agricultural College, on Wednesday called with his wife and daughter upon the family of Pres. Fairchild. They are on their way to California, where Prof. Cook has accepted a chair in Pomona College, pre-

sided over by a brother of Mrs. Cook, Rev. C. C. Baldwin. The visit here was one of family friendship, as Mrs. Cook is a niece of Pres. Fairchild. Prof. Cook was greeted here, however, by several former pupils,—Prof. Georgeson, Prof. and Mrs. Mayo, and Mr. J. L. Thomas of Junction City,—all of whom regret the departure of the Professor from their alma mater. The good will of hundreds will follow him to his new home and work.

The Alpha Beta Exhibition.

Although the condition of roads and sidewalks was far from what could be desired, it did not prevent the gathering, last evening, of a large audience in the College chapel, to witness the Twelfth Annual Exhibition of the Alpha Beta Society.

At eight o'clock the curtain raised, and the audience was greeted by the Alpha Beta Chorus of mixed voices in "The Sailor's Glee."

After invocation by Prof. O. E. Olin, President Geo. L. Christensen, in a few well-chosen remarks, welcomed the guests, and set forth the objects and desires of the Society in giving this Exhibition.

The address of the evening, "Sesame and Lilies," was delivered by Miss Jennie R. Smith, who in a characteristic, forcible manner, urged us to seek after the better, purer, and nobler objects in life. The address was a credit to the Society, and Miss Smith is to be congratulated on her good work.

"The College Bell" was rendered by a male quartette consisting of Messrs. Clothier, Harling, Coffey, and Fryhofer, and though heartily encored they did not respond.

In the discussion, "Should Capital Punishment be Retained?" the audience was treated to a fair presentation of both sides of the question. Mr. A. E. Ridenour, on the affirmative, reviewed to some extent past legislation on the subject, and showed by statistics and quotations that the abolition of capital punishment tended to increase crime. Miss Elva Palmer, in answering, held that no moral or religious argument could be produced to uphold the practice; that to reduce murder by murder was below our standard and stage of civilization.

The violin quartette by Messrs. Christensen, Fryhofer, and Clothier and Miss Grace Secrest was well received by the audience, who showed their appreciation by giving them a generous encore.

The Society paper, the *Gleaner*, was presented by the editor, Miss Stella Kimball. The paper was written and read in a pleasing manner, and its pages were filled with thoughtful, as well as sarcastic and humorous productions.

The Grand Marching Chorus was rendered in an enlivening manner by the Society chorus.

Mr. J. C. Christensen, in his oration, "Charity of Withholding," showed in a forcible and logical manner that charity is the cause of much of the misery and poverty of today, and he plead that the better way of persuasion should take the place of almsgiving.

The Ladies' Quartette in Annie Laurie was a pleasant variation in the musical part of the program.

The oration, "A Power in Civilization," by Miss Sadie Moore, brought out clearly the power of the enthusiast in the progress of science, philosophy, religion, etc.

The closing feature of the program was a play in the form of an allegory, entitled "The Voyage of Life." It taught a beautiful moral lesson in surrounding the voyager of life by the temptations persuading to worldly life, and by pleading for a Christian life, yielding at last to the latter and receiving the victor's crown.

The exhibition was closed with thanks and a good-night by President Christensen. The audience united in saying that the work was a success and a credit to the Society, and renews the appreciation of Society work at this College.

Changes in Instrumental Music.

Instruction in instrumental music is given free under the following restrictions:—

1. Music may be taken as an industrial by ladies only, after the required industrials of the first year and after passing an examination equivalent to one term in vocal music.
2. Music may be assigned as an extra only when a student does well in the general course of study.
3. Students shall not change industrial during a term, but may take music as an extra under the usual restrictions at any time.
4. Class organization shall be wholly under control of the Professor in charge.
5. Students in the Music Department shall be subject to the call of the Professor for music connected with College exercises.
6. Students shall become members of the Orchestra or the Band through connection with the Music Department by assignment.

The College and the Farmers.

The attendance at College this year shows its near relation to the various professions of life. Of the students present, fifteen are the children of widows, or have given no occupation for parents. The rest are divided among the various callings as follows:—

Farming	70 per cent
Mercantile pursuits	12 " "
Mechanical pursuits	9 " "
Professional pursuits	7 " "
Miscellaneous	2 " "

Of the whole number of graduates, —358,—the per cent from farm homes is 74. Of the faculty, 74 per cent had their early training on the farm. If any institution has a claim upon the interest of farmers and mechanics, the Kansas State Agricultural College is not behind the foremost.

GRADUATES AND FORMER STUDENTS.

W. O. Lyon, '93, attended the Alpha Beta exhibition last evening.

A. M. McCollum, student in 1883-4, is editor of the *Wa-Keeney Omniscient*.

Callie Conwell, '91, was among the visitors at the Alpha Beta Exhibition.

W. E. Smith, '93, looked in upon college friends today. His school is prospering.

W. K. Blachly, First-year in 1891-2, is teaching in Clay County, with postoffice at Miltonvale.

G. N. Thompson, '87, was married on November 30th, to Miss Mollie Sandry of Lansing, Iowa.

Kate Pierce, Third-year in 1892-3, reports pleasant duties as Principal of Schools at Wayland, Iowa.

Edith Allman, Second-year in 1891-2, is teacher of stenography in Musgrave's Business College, Manhattan.

Maude Gardiner, '93, attended chapel exercises on Friday afternoon and the Alpha Beta Annual in the evening.

Marie Senn, '90, writes from Enterprise for the text of the comic opera, "King Alfred," rendered at the Social last week.

Bertha Spohr, Second-year in 1892-3, took advantage of an enforced vacation in the city schools to visit college friends yesterday afternoon.

Lillie A. Harkins, Post-graduate in 1893, is spending her vacation at Pratt Institute, Brooklyn, N. Y., in special study for her duties in the chair of Domestic Economy at the State Agricultural College of South Dakota.

D. G. Fairchild, '88, writes from "Zoological Station, Naples," of his new place of study: "The Station charms me, and the atmosphere of scientific quiet is like that of a cloister. I never felt its like before."

E. W. Curtis, Third-year in 1890-91, visited the College this week. He has spent the past summer traveling in the Eastern States with dairy implements, and will continue his studies this winter in the dairy school of Wisconsin University.

Mr. J. E. Payne, ['87], of Edgerton, and now at the State Agricultural College, taking a post-graduate course in Agriculture and Botany, was a guest in the city over Sunday. One of these days Mr. Payne will be heard from as a farmer and an agricultural writer of the revised order. Already an amateur farmer, he hopes some time to demonstrate, by practical application, what scientific knowledge can do on the Kansas farm in the way of raising the standard of agriculture and switching the heavy side of the ledger into proper position. The expenditure of intellect and scientific knowledge has given returns in other branches of business, and Mr. Payne is thoroughly convinced that in agriculture awaits a reward for the farmer who takes the right kind of an education into the field and the feed lot, and presses it into service. One graduate, with a plan such as Mr. Payne has outlined, is worth more to the name of an agricultural college than a whole section of "scientists," "college professors," "professional" college men, or youthful theorists. Farmers want something from the class room that can be used. They want to see that there is profit in it. Of course the success which attends Mr. Payne's efforts is in the future, and we are yet unable to sing "Mine eyes have seen the glory," etc., but he certainly is headed in the right direction.—*Junction City Union*.

The Winter Term.

The winter term's study will begin on Thursday, January 9, with classes organized for work. In addition to the classes named in the catalogue course of study for the winter, there will be the same classes shown as in the fall term of the first year, and such special classes as may be needed for students over seventeen years of age who may be found deficient in arithmetic, grammar, geography, and U. S. history.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

COLLEGE ORGANIZATIONS.

December 2nd.

The Hamiltons came to order promptly at 7:30 at the command of Pres. W. O. Staver. Prayer R. J. Barnett. Marshal Emrick initiated one new member. C. A. Johnson opened the program with a declamation entitled "Mark Twain's Toast to the Babies." Debate, question, "Should this College be represented in the Inter Collegiate State Oratorical Contest?" Argued on the affirmative by C. A. Chandler and T. M. Holland. We are sorry that space will not permit some of their well-chosen points to be presented here. However, they had the Society convinced that the College should be represented in the contest. The negative was presented in a very reasonable, logical, and sound manner by H. R. Gilbert and G. W. Finley. The Judges decided in favor of the negative. "Confidence" was the title of C. M. Ginter's declamation. The most interesting discussion we have had this season was presented by E. Emrick. He spoke of the "Trade Winds," "Mon-Soon Winds," "Sea Breezes," and "Kansas Zephyrs," explaining their causes, advantages, and disadvantages. The program being short, the Society indulged in the usual extemporaneous exercises. F. Y.

After recess a motion was made to hold Frank Yeoman to trial for killing time. This was amended to read for non-performance of duty. C. D. Adams was appointed Corresponding Secretary pro tem. John Holland was appointed prosecuting attorney. After a short statement of the case, Mr. Holland gave the defendant a chance to answer the charges, which he did in a lengthy speech. The prosecuting attorney then made his final address, which was a fair sample of this gentleman's ability to make complicated matters appear simple. Mr. Yeoman then visited the Webster Society while the Hamiltons deliberated upon his case. He was found not guilty. Next in order was extemporaneous speaking. Mr. Scheel was requested to give a report of the trip to St. Marys and the foot ball game at that place. He reported that they had a good time, and succeeded in defeating the team put against them. The Critic then gave his report, and the Society adjourned. C. D. A., Sec'y pro tem.

December 2nd.

Promptly at 7:30 the Websters were called to order by President Ames. The Secretary being absent, F. J. Smith acted in his place. J. W. Evans led in prayer. Debate on the question, "Resolved, that the Queen of the Hawaii Islands should not be reinstated." Argued on the affirmative by Messrs. Hayes and Fuhlage, who claimed that the Queen had been dethroned on account of her injustice; that she was forcing taxes on the people already burdened and oppressed,—the natives as well as foreigners; that the United States did not interfere with the government, more than to protect her own citizens, and it was the dissatisfaction of the natives that forced her from the throne. Messrs. Freeman and Stokely, on the negative, held that the United States citizens on the islands influenced the natives, conspired against the Queen, and advocated the annexation of the islands to the United States, and when the Queen interfered, she was forced from the throne while advocating justice, therefore she should be reinstated. The Society decided in favor of the affirmative. Mr. Henry recited "The Independence Bell" in a good manner. Mr. Cole's recitation, "Prof. White's Suggestions to the Fourth-year Class Before Appearing in Chapel," showed much wit and ingenuity in its production. Mr. Cutler favored the Society with a solo, which was much enjoyed; being encored, he responded with another beautiful selection. By special request, Mr. Evans sung a "Mule" song. G. C. Wheeler presented an essay on "Astronomy." An essay on "Turtles," written by C. P. Scott, was read by Mr. Dorman. The Reporter was edited and read by Mr. Donaven. This proved a very valuable addition to the many good Reports, and further that Webster literary talent still exists. The President asked, Should a serial story be alternated with the Society paper? He called on members to discuss the question, which was argued both pro and con by many members. B. F. S. R.

December 1st.

President Lyman called the Ionians to order at the usual time. The Society was opened by singing one of the familiar College songs, and repeating the Lord's prayer. In the absence of the Critic, Recording and Corresponding Secretaries, the President appointed Minnie Copeland, Phoebe Turner, and Maggie Correll to fill the respective offices for the session. Olive Long was initiated. Emma Doll opened an interesting program, with a well-rendered recitation, entitled "Green Mountain Justice." Miss Huntress, who was among the many visitors, kindly entertained the Society with an excellent piano solo, receiving a hearty encore, to which she did not respond. Miriam Swingle presented an edition of the Oracle, containing many thoughtful contributions, interspersed with snatches from our "poets' corner" and bits of wit and humor. Eva Staley read an interesting and well-prepared original story entitled, "Lillian Warden." The next was a vocal solo by Rena Helder, "He Never Cares to Leave His Own Fireside," with Mary Lyman at the piano. "Lasca" was recited by Louise Stingley in her usual entertaining manner; which closed the program, and after transacting the usual Society business, hearing the report of Critic, and reading of the minutes, the Society adjourned. M. A. C.

The man who raises thoroughbred stock must be intelligent and liberal, must understand the laws of breeding, and know how to sell to advantage.—*Mirror and Farmer.*

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The programme of the thirty-first annual meeting of the Kansas State Teachers' Association has been distributed. Copies may be obtained from the County Superintendents.

Superintendent Gaines reports that from the letters received at his office the indications for a large and successful meeting at the State Teachers' Association are very encouraging.

The Teachers' Reading Circle is well organized in Mitchell and Ottawa counties. Superintendent Irwin Stanley of the former reports seventy-five members, and Superintendent O. B. Fleming of Ottawa sends in ninety names.

The programme of the State Teachers' Association says: "Teachers who attend the meetings of the Association are the better for the acquaintance they make with other teachers of the State. A great meeting at the capital increases the influence of teachers throughout the State. Teachers are urged to consider the benefit of attendance."

S. F. Wright, the teacher at Highland Park, Topeka, had a rather exciting time one afternoon of last week. A boy by the name of Fred Lewis refused to study, and when told to do so by the teacher, used some disrespectful language to him, and when Mr. Wright boxed his ears, took possession of a heavy iron poker and proceeded to relieve the monotony of the occasion by attacking the teacher most vigorously, threatening his life. A lawsuit will be the result.

The last *Baker Beacon* is a football number. It is printed in orange ink and illustrated by poultry cuts, pen drawings from the life of *Jelis domestica* and scenes from Dante's *Inferno*. The ink is so pale that it is not possible to read the text, but the headings proclaim that "Baker's Rush Line Stood Impregnable—Toomey Carries the Ball and Six Men, while Tylor and Games Each Pull Heller for Ten Yards—etc. Mills Wore Bandages All Over His Face for Fear of Getting it Spoiled—etc."

The young ladies of Washburn College, Topeka, have a class in gymnastics, and are required to dress for these exercises in Turkish costume. Recently while they were going through their exercises one of the boys from the college removed the skirts from the dressing room, and it was some time before the girls could get back to their rooms without running the gauntlet of the male students. The facts were reported to the Faculty, and it was decided to expel the student, but his associates rebelled and declared they would leave the school if such a penalty was imposed.—*Exchange.*

State Superintendent Gaines has been working up an idea concerning oratorical contests. He wants schools in each township this winter to hold contests and send their best orators to a township contest to be held during the present winter. The successful orators will meet in a county contest, and the winners of the county will contest for honors in the Congressional District, while the seven successful ones will meet and hold an oratorical "battle of the giants," probably during the State Teachers' Association next year. Mr. Gaines will send out circulars soon to the various County Superintendents asking their co-operation in the scheme. The editor of this column for one believes that the contest business has been greatly overdone of late, and that it has worked harm instead of good in the schools of the State. It is time to call a halt, and buckle down to solid and energetic class-room work once more.

The Cooper *Courier*, in speaking of the course of study at Cooper Memorial College, says: "Students completing this course of study will receive a certificate to teach in any of the schools of the State for three years, and having taught successfully two of these three years will receive a life certificate, good in all of the schools of the State. The right to confer these certificates has been given to but ten institutions in the State, and Cooper Memorial is one of them." The *Courier* makes a mistake of nine, for there is but one institution in Kansas, the State Normal, that can grant to graduates thereof a State certificate, and any other school that advertises to do so simply tells that which is not true. Let our prospective holders of State certificates remember that the State alone—and the Normal School—has power to grant the same, and that the graduates of the ten above-mentioned schools must pass an examination before the State Board of Education before receiving a State certificate.—*Holton Informer.*

Proud as we may be of our Kansas high school system, yet at the same time we feel that this system is far from perfect, in that it is not suited to the needs of a large percentage of our people. Of this class, the portion who are able to take the course as at present arranged are thereby educated out of their proper sphere, and those who are unable to take the course as outlined are practically deprived of any education. Now the remedy is this,—and let it be known that the idea is not original, but that it has been advocated by the most prominent sociologists. Place along side of each high school course, as outlined, a course in practical science and practical work such as will prepare the student in a thorough and scientific way for any of the trades. The course should be such as can be completed in the same time as the present high school course. An allowance of money could no doubt be paid for work done in the school, so that the poor student could earn at least a portion of his expenses. By such a course of study the ordinary laboring man's son, who is at present deprived of even a high school education,—and it is as well that it is so,—could be prepared to do the work which he must inevitably do.—*Excerpted from the Students' Journal.*

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.
2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.
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4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.
Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.
All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.
The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.
Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

THE UNDERGRADUATE COURSE OF STUDY FOR A SCIENTIFIC SPECIALIST.

BY PROF. A. S. HITCHCOCK.

IN discussing the courses of study best suited to colleges and kindred institutions, the argument will be, by common consent, based upon the fundamental requirement that the course should be general. But this requirement may be interpreted in at least two ways. It may be that the course should provide for instruction of so varied a character and so wide a range that the student, previous education and natural bent being disregarded, can, after graduation, enter with equal equipment upon any branch of study, or upon any profession. Whether or no such a course could be framed, it is doubtful if it would be so well adapted to the needs of society as one somewhat more special in its nature.

Or, the requirement may be interpreted to mean a course which, while giving the student a wide range of useful training, will nevertheless enable him to follow along some lines of work to better advantage than along others. With such a course at one end of a series, one can pass through all gradations to the other end where the course is extremely special, where the effort is made to fit the student for one line of work, and to advance him along this line as far as possible in a given time, at the expense of training in branches not bearing directly upon his specialty. Without going into a discussion of the merits of the two extremes, I wish to say a few words upon the desirability from a purely practical standpoint of a general education as a foundation for special study. Owing to the wide range of the demands made upon a professional man, he cannot afford to ignore this general training, for as a matter of fact it is extremely difficult to make up in after life what is neglected during the period of preparation.

My plea is, then, that a student who wishes to become a specialist should lay a broad foundation. It is desirable that a person should be able to talk upon a variety of subjects, and be familiar with the principles of various sciences and arts, but it is not for this reason that I would recommend spending the valuable time of youth in making a thorough preparation. It is because of the direct bearing this will have upon the student's future work. In the professions, competition is increasing to such an extent that success is coming to depend largely upon familiarity with not only the main course followed, but all the side channels with which this anastomoses.

I wish to suggest some of the branches of study which it seems to me should be included in a general course fitted to prepare a student for the profession with which I am most familiar. I do not wish to make prominent what the training of a botanist should be, but to give an example showing the necessity of a general training to him who would become a successful specialist.

I would include a series of terms in mathematics, embracing algebra, geometry, trigonometry, descriptive and analytical geometry, and the calculus. While these branches will seldom be of direct use to a botanist, yet a mathematical training is of vast importance in any profession. But it must be admitted that to the student who is to become, for instance, an engineer, these same branches would have an additional value.

Of the foreign languages, Latin, French, and German should certainly be admitted. They should be studied mainly for the use to which they would afterwards be put. The scientist would use them as tools, and so would not spend time in studying their history and intricate points of structure and etymology. The same languages in a course of study intended to equip philologists, historians, or other literators would be taken up in a different manner, and in proportion to the time spent would have an additional value. They would have the same general value and an additional special value.

The elements of philology, archaeology, and history are necessities to the botanist who would investigate the origin of our cultivated plants. A few grains of wheat are found imbedded in a brick of an Egyptian pyramid, flaxseed in the debris of the lake-dwellers of Switzerland, or beans in an ancient Peruvian tomb. These facts have an important bearing upon the history of the plants mentioned, and the questions can evidently be taken up by no one but a botanist. But he must be equipped with a wide knowledge of many collateral branches. The actual solving of such enigmas is done by the few botanists who have more than an elementary equipment of this

kind. But the solution being made, the elements are still necessary for a correct understanding of the subject. The botanist uses his knowledge of archaeology to solve a problem in botany. An archaeologist might find it necessary to use his knowledge of botany to solve a problem in archaeology. Thus are the various branches of investigation inter-dependent.

The apple has no Sanskrit name, but is now extensively cultivated in India. The various European languages of Aryan origin have names for this fruit, such as afal, apfel, aval, apli, and iabloko, all of which evidently came from the same root, while the Basques had an entirely different word—saraga. These facts, with others, lead botanists to think that the apple was known to the western Aryans and was carried westward with them; that it was introduced into India rather recently; that it was already cultivated in western Europe before the spread of the Aryans; and hence must have been indigenous over a wide area. This is an example illustrating the bearing of philology upon botany.

It is needless to say that a thorough training in English, including the mental sciences, is imperative. Particular attention should be paid to essay writing and extemporaneous speaking, in both of which the student will be materially aided by those valuable adjuncts to a college course, the literary societies.

Turning to the physical and natural sciences, we find a still closer relationship and a still greater necessity for careful preparation. In these lines a more extensive knowledge is needed, and the difficulty of acquiring this later on is correspondingly increased.

Geology leads up to botany through vegetable paleontology. The problem in geographical distribution and the developmental history of plants in time, that is, evolution, can be solved only by the aid of geology. We find Agassiz carrying along with his zoological investigations, important work on glaciers. But he did not pursue the two branches separately and independently. On the contrary, his geological studies were used as supports to his zoological theories.

Physics and chemistry should be given room in our botanical course for the reason that they are the very essence of plant physiology. The plant lives, grows, and acts according to physical and chemical laws. I should insist on at least a short time to be devoted to physical manipulation. Botany is becoming more and more an experimental science, and I know of nothing better as a preparation for experimental work than laboratory training in physics. In chemistry, the botanist would need especially general chemistry, qualitative analysis, and theoretical chemistry of the carbon compounds. Quantitative analysis would be of secondary importance, since it is of little direct use to the botanist, and the training in experimental work can be obtained equally well from the laboratory work in physics.

Let us now turn to biology. It is evident that considerable time should be spent upon zoology, especially histological manipulation and systematic zoology of the lower forms. Horticulture should be included in so far as it treats of the science of the propagation of plants; further than this it becomes a specialty.

How much botany should our course contain which is intended to train botanists? I should say that this branch should be reduced to a minimum and include only such general principles as are necessary to a proper understanding of the other sciences.

I have outlined a course to fit a botanist for his special work. A specialist in any line would probably lay out a similar course of general training as a foundation for his particular branch, the difference being mainly in the relative amount of time devoted to each study and the manner in which each should be treated. I have reduced the botany to a minimum on the supposition that the student has decided to become a botanist, and hence can get his special training later. But we are met on the very threshold of the discussion by the fact that few students know, on entering college, either what they wish to fit themselves for, or for what kind of work they are best adapted. How is a student to know that he likes botany till he studies it?

I have shown that the specialist needs a general training. On the other hand, a student needs a general training in order to wisely choose his specialty. Taking all things into consideration, then, it seems to me that in a general course which is to lead to the sciences, the studies should be so balanced that all are represented and none are discriminated against. While I believe in electives, I also believe that a student should not specialize in an undergraduate course. If he decides before graduation that he is fitted for a certain profession, he should not take special work

in that line, but rather select such general studies as are most likely to be of benefit as collaterals. The student should understand that the four years ordinarily given to college work are only a preparation for further study of a more restricted character.

THE APPEAL TO HISTORY.

BY PROF. FRANCIS H. WHITE.

THE appeal to experience, to what has been, is natural and commendable. The father is constantly citing the various incidents of his own life as warnings or encouragements to his children. The preacher, the teacher, the statesman, grow eloquent when they discover a likeness between the present and the past, holding up to their hearers the record of what has been in order to assist or resist some movement which they favor or oppose.

The writer would be the last to discourage the study of past events, for he is fully convinced that history may be used to improve the judgment, stimulate the imagination, arouse enthusiasm. Perhaps, also, by the careful study of historic data, laws or principles may be discovered that will be of great assistance in all our reasoning about current affairs. These uses of history are legitimate, but not so its employment to bolster up predictions based upon superficial resemblances.

Did you ever try to see a likeness between some of Dickens' characters (or caricatures) and people of your acquaintance? It is an interesting, but rather dangerous experiment. Some obvious peculiarity like a hook nose, or pronunciation is almost sure to be selected and identity with the character established on that slight foundation. So eager does one become to find resemblances that he grows blind to differences and exaggerates every trifle that increases the likeness. At last the imagination fairly transforms the acquaintance, and makes him over to fit the character.

Some such process seems to go on in the mind of the person who discovers a likeness in a current event or movement to one recorded in history; differences are ignored, and only resemblances noted. The great difficulty and danger in reasoning from the past to the present lies in the complexity of social phenomena, the multitude of relations and influences that produced the result, and which it is hardly more than possible, certainly not probable, will ever appear again in just the same way.

When we are tempted to be dogmatic in our predictions, relying on the dictum, "like causes produce like results," let us stop, and thoroughly satisfy ourselves that the causes are "like." Compare the elements of the problem, for instance, the natures of the individuals living in the two periods. Do not be sure the people are alike because in both they eat, sleep, and require shelter. Consider that sum of qualities we call character, and ask such questions as whether they are brave, hopeful, impulsive, impressionable, conscientious; then rise to the consideration of the national character as it is revealed by public opinion.

See, also, how far a crust of custom has formed over them; what traditions, sentiments, ideas, are abroad, and how much influence each has. Notice what facilities there are for the rapid formation and expression of public opinion.

If the investigation progresses so far that all the interlacing lives of influences have been traced, the resultant accurately computed, and still the resemblance between the past and present conditions seems certain, prepare for the possible failure of the prophecy by considering with what exasperating frequency the unexpected persists in happening. It is well to ask what would result if there should appear upon the scene, as there has so many times in the world's history, some epoch-making man, some theory-shattering genius who is a law unto himself, and refuses to be put tamely into the prepared niche; perhaps some "hop o' my thumb" who yet has such power over men that he has but to wave his hand and thousands fall over each other in their eagerness to serve him. Or perhaps "somebody blunders," Grouchy arrives too late—then what becomes of the results so confidently heralded?

One who realizes how large is the number of factors in every social movement, and how many of these are imperfectly known or entirely out of sight, will be very cautious in making comparisons between events separated by a long period of time, and occurring, perhaps, under different religious, political, or industrial conditions.

ACCOMPLISHED GIRLS.

BY MARY LYMAN, '94.

AS the college years go by, each finds at its close a new set of graduates ready to leave this place to enter upon their various life duties. The boy who leaves without having attempted to become acquaint-

ed with some industrial art, as printing, carpentry, iron work, or farming and gardening,—if he has not shown a special interest in one of these lines,—we very quickly form our conclusions of his future work. But not withstanding this, it is at most a rare exception that a girl while here feels the necessity of commencing from the very first to make all her efforts tend toward one great end. This day and age require much more of women than ever they did before; so the great need on her part for thorough qualification for some one thing.

Not every First-year girl who enters the sewing class in the Fall Term finds (after the first week's timidity has worn off) that there is anything in there that a lively girl wants to do for a life-time. But do not buttons have to be sewed on, torn places to be mended, button holes to be nicely worked, blindstitching to be actually blindstitched, ruffles to be gathered, etc.,—each carrying with it a secret which must be thoroughly learned before complete success comes? Make all these tend, then, each time to the bettering of your handiwork, and good results will follow.

When our First-year friend is a Second-year, we hear her complaining because she has to take cooking, (not that she exactly dislikes cooking, but that she had planned the year before to become a seamstress) and now this change breaks in and delays her plans. Ah, my friend, think a moment: will there always be some one else to do the cooking while you sew? As George Eliot says through Mrs. Poyser to Hetty, "Do you think you can live wi' our eatin' an' nourish your inside wi' stickin' red ribbons on your head?" Becoming accomplished in these two arts speaks far more for a woman, as a woman, than all the talking or writing she can ever do.

But another of our First-year friends, having passed through the second year, does not find herself at all especially adapted to either of these fundamental arts, beyond satisfying her immediate wants. She finds that the drawing room furnishes the greatest attractions for her, especially in free-hand drawing, for she can draw as fast as she likes and in this way be supplying herself with very attractive landscape pictures which when framed beautify the walls of one's room very much. Of course not every girl can enter this department with the satisfied feeling that prompts some persons to accomplish much, but when she can in the least measure she will find that she has gained a great benefit; for "drawing gives brain time to think." Printing, music, and the library are each open for all; and, if a "special" be attempted in setting up type, becoming more skilled in instrumental or vocal music, or growing better acquainted with literature, time is by no means wasted. Think of these things, and see what an excellent opportunity each girl in College has to find the work she is best fitted for. Now is the time to grasp it. Begin and make every movement pay.

DIVISION OF WORK.

BY LAURA S. M'KEEN, '95.

AT the present time one can hear a great deal of discussion on the labor question; but it is seldom presented in the way it more immediately concerns men and women in relation to each other.

This is an age of specialists, and it is hard to find any one who can master many kinds of work. Each has his chosen vocation by which he makes his living, and if thrown out of employment in this line, he is sometimes very much at sea as to what to take up next, for it is quite likely that he will not be able to do competent work in any other line.

We are often compelled to ask ourselves the question, Why should the ideals, works, and tastes of men and women be viewed from such a vastly different standpoint?

In nearly all cases the work assigned to the two is of an entirely different order. A woman's proper sphere is considered to be in the home, while men are employed in nearly all vocations of life, although rarely in this country as house servants.

It is due to open air life, that man is enabled to triumph over woman in regard to his great physical power, and, in some cases, higher mental development.

A woman may wash, iron, scrub, cook, sew, and keep the home in general order, while a man cultivates his fields, sows his seeds, harvests his crops, and takes care of his stock.

Men and women may both be found actively engaged as teachers, book-keepers, clerks, authors, and editors. But if a woman dares to assert her individuality by taking the lead in various enterprises or in general management of all kinds of affairs, even if she is competent, critics are eager to condemn her advances and declare her out of her proper sphere.

On the other hand, if a man attempts to master

the intricate arts of house-keeping, he is called effeminate.

Why should not each one know how to do all kinds of work? By this I do not mean that a woman should be actively engaged in farming as a means of support, or that a man should change his employment for constant work in the house, but that each should do enough of all ordinary kinds to acquire a fair knowledge of them, and be able, if circumstances demand it, to do competent work in all places, and thus save much inconvenience, or, in case they employ help, have a little idea as to how much work can be justly required.

How many times it becomes convenient for a woman to know how to do chores; and it is just as convenient for a man to know how to cook his own dinner.

The fact is that women, as a rule, are too delicate to endure much brisk out-of-door exercise, and to indulge in this would do away with her delicacy, the possession of which to many women is a great source of enjoyment.

It is not desired that any woman should lose her regard for all that is true, noble, and womanly in the true sense of the word, but that some of this false pride in regard to her station should be given up.

If she could be brought up from her early childhood to do out-of-door work, at least the lighter sorts, she would be a much more healthy woman, and the knowledge acquired would not degrade, but rather elevate her, and she would become more of a companion for her brothers, for then her knowledge would not be confined to her own little home duties, but she would take more interest in all topics, and possessing some practical knowledge, could discuss nearly all subjects intelligently and with interest.

On the other hand, if a man were trained from his early youth to attend to household duties, he would soon acquire a desirable knowledge of culinary arts, serving, and all things in general.

This, I think, would have a tendency to make a man more refined and gentle in his ways, for having had the experience, he would be more willing to give the desired amount of credit to woman's work; for instead of mere strength, these little things would require the patience and perseverance which many men do not possess.

Finally, let us remember that we are not living for ourselves alone, but to be companions and helpers to all; and in order to do this, we must pursue more than one line of thought and action.

CHEAP BOOKS CALL FOR CHEAP PAPER.

BY SUPT. J. S. C. THOMPSON.

THE average buyer has noticed of late years the extremely low prices put upon most books, the cost of many of even the best known works having been in many instances reduced from one-third to one-half their value ten years ago.

The sweeping reductions have of course proved of great benefit to the reading public, and it may safely be assumed that the rapid growth of libraries public and private for the past decade has been largely due to the cheapened cost of books. Nobody is too poor to number a small library amongst his possessions, if he is not particular as to quality of paper or binding, but wants the volumes for temporary use or for the sake of the text alone.

But our books are gradually becoming poorer as well as cheaper, and it has already become a serious question with librarians and bibliophiles as to the preservation of many latter-day prints. The growing demand for books at a low price, the sharp competition between publishers, the scarcity and consequently high price of rags—the material from which the best papers are manufactured,—are responsible for the mass of cheap books with which the country is flooded. These cheap works soon become discolored, and eventually the paper in many of them will actually crumble into dust when handled.

Manufacturers still make all-rag paper, but find a market for little of it. Wood pulp has almost wholly succeeded rags, and costs less than half as much as the latter. To the casual observer, wood paper presents as good or even better appearance than rag, and even the manufacturers at one time thought it superior to any other kind. But time has proved the fallacy of their opinions. In treating the wood pulp with soda ash for the purpose of extracting the resinous matter, it is impossible to free it entirely from the chemicals, and in time the paper is affected by them. The paper buyer for a large publishing house took from the shelves recently some wood pulp paper that was ten years old and found it unfit for use from discoloration and brittleness. The Librarian of the Mercantile Library of New York in examining some German books less than ten years old found the sheets ready to crumble from the admixture of clay used quite extensively by the paper manufacturers of foreign lands.

In the opinion of a prominent publisher, there will in a few years be but few first editions of what are now standard works. There will of course be reprints, but they will not satisfy the bibliophile, who loves first editions simply because they are such, and will hunt high and low for rare books of generations past.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Miss Stokes has charge of the Special Cooking class during Mrs. Kedzie's absence.

Prof. Jones preached at the Congregational Church on Sunday, in the absence of the pastor.

Prof. Walters has had printed a number of handsome free-hand alphabets for the use of his drawing classes.

Mr. J. L. Burtis called at the College on Wednesday to show his friend, Mr. Russ, of Frankfort, the extent of equipment.

Ex-Regent Finley, of Goodland, called on Monday to visit his son now in College and to greet his many friends among the Faculty.

Mr. Holloway, of Washington County, and Mr. Gregory, of Douglass County, were visitors at the College on Monday morning.

The Board of Public Works, accompanied by the State Architect, visited the College on Wednesday to inspect the new buildings.

The College Museum has received from Mr. C. L. Reed, of Selkirk, Kansas, a very large and handsome specimen of the golden eagle.

A great stack of white paper, the sheets 6x18 inches in size, awaits in the Secretary's office the examinations of Thursday and Friday.

Ex-Regent Coburn is appointed to an important and responsible position in the Pension Office at Topeka, under Ex-Governor Glick.

The "P. M." boys look forward eagerly to the third annual banquet on Friday evening next. An interesting program has been prepared.

Rena Helder, Fourth-year, had a place on the program of the Episcopal Concert at the Opera House last evening. Several other students appeared in tableaux.

A term's work closes with the examinations on Thursday and Friday next, and Saturday will witness the departure of the greater number of students for their homes.

Prof. J. W. Rain, instructor at this College two years ago, will read "The Merchant of Venice" and other selections at the Presbyterian Church, Tuesday evening next.

Prof. Mayo is given a place on the standing committee upon diseases appointed by the United States Veterinary Association. This is a tribute to his work in the Experiment Station.

Councilman Earnest visited Manhattan last Friday and he says the new College buildings that are going up there are beauties. He was very much impressed with the Agricultural College.—*Topeka Capital*.

Many students visited the Blue River on Tuesday and Wednesday to enjoy the fineskating. The warm wave of Thursday spoiled the ice, but today (Friday) the indications are favorable for a new crop in a day or two.

Among the students who have been sick for a week or thereabouts are J. E. Taylor, Blanche Hayes, Lawrence Hayes, Byron Kirkpatrick, and C. D. Rees. Many others have been kept from classes for a day or two by a grippe and colds.

Large bromide prints of typical injurious and beneficial insects, such as the chinch-bug and wheat-straw worm, spined soldier bug and *phymata erosa*, are being colored from nature by Miss Kimball. The pictures will be framed and used for classroom illustration.

The Manhattan Horticultural Society will meet at the College Thursday, December 21st, at two o'clock. Papers will be read by Prof. Mason and Mr. T. C. Wells on subjects of interest to farmers and fruit-growers. Officers will be elected for the ensuing year. All are invited.

A Farmers' Institute is held this week at Oberlin, the home of Regent Street. The College is represented by Mrs. Kedzie, who reads a paper on "Domestic Science for Girls;" Dr. Mayo, "Examination of Horses as to Soundness;" Prof. Mason, "Horticultural Methods of Propagation."

A visit to the kitchen now-a-days reveals a great lot of bon-bons in various stages of completion. A more tempting array of confections was never beheld, the assortment including English walnut, pecan, hickory nut, almond, Brazil nut, fig, and date creams, together with a number of plain kinds. These candies are the work of the Special Cooking Class, and though prepared "for practice," they are in such

great demand that the supply is exhausted before the last lot has time to cool.

The Fifth Division of the Third-year Class rendered declamations in chapel yesterday afternoon as follows: "Individualism," A. C. Peck; "Calvin the Reformer," I. A. Robertson; "Military Genius," R. W. Rader; "Wreck of the Steamer Arctic," Mabel Selby; "Roscoe Conkling," John Patten; "Hofer's Defense," W. T. Taylor; "Excerpts from One of President Garfield's Speeches," F. E. Rader. Miss Grout sang a solo, "My Lover is a Sailor Lad."

GRADUATES AND FORMER STUDENTS.

Emma Stump, Second-year in 1891-2, is a student at the Fort Scott School of Elocution.

C. H. Paul, Second-year in 1892-3, now a student at the State University, visited College friends yesterday.

F. R. Smith, '93, is planning to study law under Attorney Irish, of Manhattan, beginning January 1st.

Frank Irvin, Second-year in 1891-2, stenographer in the Santa Fe offices at Raton, N. M., will spend the holidays at home.

J. A. Rich, student in 1891-2, is teaching near WaKeeney, Trego County. He was glad to greet Pres. Fairchild at the Teachers' Association.

A. E. McCallom, student in 1884-5, is in the office of the WaKeeney *Omniscrat*, of which he is editor and manager. He still cherishes memories of his college days.

The following paragraph from the Riley County *Educator* concerns several graduates and former students: "The vacancies existing in the Manhattan city schools were filled by the Board of Education last Friday evening. Miss Jane Tunnell was promoted to the ninth grade; Miss Cochran, of Emporia, to succeed Miss Tunnell; Miss Elizabeth Fraser, also of Emporia, to succeed Miss Mima Carey, resigned; Miss Flora McFadden to succeed Miss McElroy, resigned; Miss Elizabeth Stingley to succeed Miss Carrie Stingley, resigned; Miss Rowena Whaley promoted to Principal of Primary Department to succeed Miss Smith, resigned; Miss Houghton to succeed Miss Whaley, promoted; Miss Myrtle Whaley to succeed Miss Houghton, promoted. Wm. Jackson was elected to Janitorship made vacant by the death of Mr. J. L. Jackson." In view of the fact that the retiring teachers gave general satisfaction, and the further fact that they are all ladies, these resignations have a tremendous significance!

Changes in Instrumental Music.

Instruction in instrumental music is given free under the following restrictions:—

1. Music may be taken as an industrial by ladies only, after the required industrials of the first year and after passing an examination equivalent to one term in vocal music.
2. Music may be assigned as an extra only when a student does well in the general course of study.
3. Students shall not change industrial during a term, but may take music as an extra under the usual restrictions at any time.
4. Class organization shall be wholly under control of the Professor in charge.
5. Students in the Music Department shall be subject to the call of the Professor for music connected with College exercises.
6. Students shall become members of the Orchestra or the Band through connection with the Music Department by assignment.

Boys from the Farm the Best Students.

Pres. Schueman of Cornell University, writing to *Farm and Fireside*, says:—

"In reply to your letter of enquiry, I am glad to have an opportunity of saying that I think the farmers' sons are among the best students we get in the universities. Physically, they are vigorous; they have, as a rule, good intellects, and they are hard-working and serious. It is a pity that more of them do not embrace the opportunities offered nowadays for higher education. Of course, farmers have very little money to spare to send their sons to college; but I am persuaded from a pretty widespread experience that a farmer's son who gets a start, who manages to graduate at a high school, can, by teaching and by availing himself of some of the scholarships now offered in so large numbers in our universities, manage to put himself through college, and even to continue his studies as a graduate student. It is really only the first steps that are hard. The road from the farm to the senior class of the college seems very long, but I repeat that it is not unduly arduous after that portion has been traveled which leads through the high school. Furthermore, the necessity of self-sacrifice and of making one's own way is the very best discipline a youth can have. Within the last twenty-four hours I have heard a rich man regret that certain boys in whom he was interested were not driven, by necessity, to make men of themselves."

The Werner Company, of Chicago, is publishing in weekly numbers a report of the proceedings of the World's Parliament of Religions, held in Chicago, in the Memorial Art Palace, under the auspices of the World's Columbian Exposition. The addresses are complete, and verbatim, and are illustrated with portraits of one hundred of the principal delegates and speakers. There are to be eleven parts, and the entire cost but \$1.00, postpaid.

COLLEGE ORGANIZATIONS.

Student Editors.—E. A. Donaven, Mary Lyman, Jennie Smith. *Ionian Society*.—President, Mary E. Lyman; Vice-President, Mariam E. Swingle; Recording Secretary, Hortensia E. Harman; Corresponding Secretary, Isabella R. Frisbie; Treasurer, Olive M. Wilson; Critic, Lorena M. Helder; Marshal, Sadie M. Stingley. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, F. W. Ames; Vice-President, F. J. Smith; Recording Secretary, I. A. Robertson; Corresponding Secretary, W. A. Cavanaugh; Critic, J. M. Williams; Treasurer, J. B. Dorman; Marshal, E. C. Trembly; Board of Directors, Geo. Forsythe, C. W. Pape, Chase Cole, E. R. Farwell, and G. M. Dick. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Hamilton Society.—President, W. O. Staver; Vice-President, J. A. Scheel; Recording Secretary, C. A. Johnson; Corresponding Secretary, F. Yeoman; Critic, E. L. Frowe; Treasurer, C. E. Pincomb; Marshal, E. Emrick; Board of Directors, W. I. Joss, C. V. Holsinger, V. I. Sandt, W. H. Painter, and R. J. Barnett. Meets on Saturday evening 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, G. L. Christensen; Vice-President, Stella Kimball; Recording Secretary, Gertrude Havens; Corresponding Secretary, A. E. Ridenour; Treasurer, Grace Secrest; Critic, Jennie Smith; Marshal, M. A. Limbocker; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, Martha Cottrell, Stella Kimball, and C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Scientific Club.—President, J. T. Willard; Vice-President, A. S. Hitchcock; Committee on Programs, J. T. Willard, ex-officio, E. R. Nichols, A. S. Hitchcock; Secretary, Marie B. Senn; Treasurer, F. A. Marlatt. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and College officers.

December 8th.

The Ionian Society was called to order immediately after chapel with Vice-President Swingle in the chair. The opening exercises consisted of congregational singing, prayer by Miss Turner, and roll-call. Miss Hayes was called to the chair until the President came. The program opened with an instrumental duet by the Misses Leicester, which was heartily encored; and to which they responded. Miss Mollie Grout gave sketch of that beautiful Bible character, Ruth. An interesting discussion on the subject, "Is conscience a safe moral guide?" was opened by Miss Wilkin, who was followed by Misses Turner, Helder, and Correll. Following this was an instrumental solo by Miss Helder, after which an interesting edition of the Oracle was presented by Miss Johnson, the motto of which was, "Shoot your arrow high, even if it does fall in the wind." Miss Long read a selection entitled, "The Letter." Miss Harmon delivered an invective. Adjourned after roll-call with quotation.

I. R. F.

December 9th.

The Hamiltons were called to order promptly at 7:30 by President Staver. Prayer, E. L. Frowe. The program of the evening was started off at a good rate with a declamation from D. Maelzer. J. Poole's essay, "A Trip to Kansas City," was a good production. G. W. Whitson rendered an amusing declamation in an earnest manner. Essay, "Amusement," was presented in a very attractive manner by E. L. Smith. C. S. Evans' oration, entitled "Failure," was anything but a failure. W. H. Painter gave a declamation which was noted for the great number of "S's" it contained. Debate, question, "Is the character of Napoleon Bonaparte to be admired?" Opened by R. J. Barnett, who brought out the character of Napoleon Bonaparte in a very clear and positive manner. W. I. Joss, negative, brought up the other side of Napoleon's life, and called attention to the statements made in English history to prove the undesirable character of Napoleon. R. R. Denny, affirmative, next held the undivided attention of the Society while he ably shattered the argument of the preceding speaker, while G. T. Farley, negative, exercised his ingenuity in showing up the dark side of Napoleon's private life. The Society decided in favor of the affirmative. A. P. Carnahan delivered an oration in his usual oratorical style, which won the hearty approval of the Society. B. W. Conrad and C. S. Pope rendered a selection on their guitars. The Recorder was presented by V. Emrick. It was an unusually good edition, with the motto, "We can beat the A. B. annual and not half try."

F. Y.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

FARM NOTES FROM VARIOUS SOURCES.

On a well-regulated farm nothing need go to waste.—*Nebraska Farmer.*

If best of all fruits are grown, there is little danger of overstocking the market.—*Orange Judd Farmer.*

The best beef grown is Jersey beef, but it is not the most profitable to be raised for market.—*E. C. Bennett.*

Good horses are as valuable and as hard to buy as they ever were, but they are the only kind in demand.—*Allen Lowe.*

Thousands of tons of material are annually wasted because farmers do not generally appreciate the value of mulch.—*Farm Life.*

Do not waste manure by spreading it too thin, with the idea that you must get all over the farm in a given time.—*Mirror and Farmer.*

A good share of the profits of the ordinary farm is wasted in making good the loss which comes to machinery from gross neglect.—*Mirror and Farmer.*

An orchard well managed may be made to pay several times as much for the land occupied and the labor spent as the best field on a farm.—*Mirror and Farmer.*

The future success of this great republic depends upon the intelligence of the American farmer. Being surrounded by practical results, he will not be governed by theories, making something from nothing. Nature's laws teach him better.—*Samuel W. Allerton.*

The young animals are the future breeders. Every farmer knows that when the calf, colt, or pig is stunted when very young, the effects remain. Push the young ones, and keep them growing. The first year's gain is more important than any year in the future.—*Mirror and Farmer.*

The boy on the farm will soon be the farmer. It is well that his earlier impressions of the calling to which he belongs will be such as to make him believe there is no place to live on like the farm, instead of believing it to be the place from which he will escape as soon as he is old enough.

It is easy enough to raise a gentle cow if the owner treats her right as a calf. Be gentle and kind always; fondle as much as you please, but never tease. Teasing has been the ruin of many a cow and the disappointment of many an owner. Ill-bred boys have a fancy for that sort of meanness.—*Mirror and Farmer.*

A man who has faith in his land "runs" it for all it is worth and makes money. Whether he knows it or not, he employs scientific methods, and they are always successful in the end when governed by common sense. But he must employ economy also. If he is wasteful he will not succeed, no matter how much he makes.

When you have a horse to sell put it in as good order as you would a beef animal, at least. Have it well fattened, then curry it up sleek and clean, trim off all the shaggy hair on the legs, and make it look as though you thought it was worth paying some attention to. It will sell the better for such pains.—*Farmer's Home Weekly.*

Mixed farming is commendable when it don't get to be too mixed. A farmer who has big irons in the fire marked, respectively, grain-raising, fruit-raising, hogs, potatoes, tobacco, horse-breeding, dairying, and poultry, is pretty sure to have the dairy iron scorched every day, and ten to one his fence-corners are permanently choked with briars.—*Ohio Farmer.*

In order to be wholly successful a farmer should make his plans a long time in advance of the day when they must be put into operation. The best way is to mature a plan of operations that will require some years for fully carrying out. This brings better results than the changeable way that some have of trying one way this year and another the next.

If one-half the pains were taken to develop speed at the walk that is now taken to develop the trotting gait, the practical value of our work horses could be doubled within the next twenty years. And right here is a chance for something practical in the way of horse-breeding and management in which every farmer and every farmer's boy can participate.—*Breeder's Gazette.*

A farm of suitable size well managed, a house conveniently planned and cozily furnished, a family whose members are refined and christians, who have plenty of work, enough to make them healthful and happy, but not slaves; who have music and good reading in their home, with time to do good and make others happy, no debt to worry about; perfect love and sympathy with each other; that is our idea of the highest earthly happiness.—*Farm Life.*

The size of the farm does not affect success. There is no limit to the productive capacity of any soil so far as the present methods of farming are concerned. In some portions of Belgium, where the farmers are compelled to utilize every square foot of land, the yields are enormous, far exceeding the farms of any other portion of the world, yet the original soil was poor and not considered very valuable. A high system of cultivation has changed the soil itself, which is not very fertile.

At the best, the farmer who attends to his business does not see the human face too often. But often the farmer puts his dwelling on poorly drained ground in order to get it near the highway. For the pleasure of seeing the life of the highway he pays a heavy penalty—diphtheria and fevers for his family. Put the dwelling-house at the roadside if you can get a well-drained spot there, but be sure of good drainage. Better live half a mile from the highway and have a healthful home.—*The Country Gentleman.*

FOOTBALL NOTES.

Football is a dangerous and brutal game, a useless sacrifice of youthful vigor and spirit.—*Kansas City Star.*

In America the number actually killed in the game of football during the season just closed foots up to nine, while many were maimed for life.—*The Nation.*

During the season just closed there occurred in England twenty-three deaths from injuries received while playing football, and three deaths from illness contracted on the football field.—*The Nation.*

Such a game as the good people of Denver witnessed a fortnight ago on the D. A. C. grounds partook more of the nature of public amusements five centuries ago than of the high moral tone of 1893.—*Rocky Mountain Collegian.*

Coleman's nose, which he broke in the game with Ann Arbor, and which he injured again in the game with Missouri on Thanksgiving day, will be a little crooked when it gets well, and will bend somewhat to the right.—*University Courier.*

Now that the football season is over, the students will have to turn their attention to prize fights. It will seem rather tame after football, as there is not half as much chance for the contestants to get hurt.—*Courier, Kansas State University.*

It is impossible to say how much bodily damage a youth ought to undergo to fit him for life. If one broken leg is good, why are not two better? and if a broken nose be a means of grace, why not add a few broken ribs? Why is not the torture the Indian boys undergo to qualify as warriors something for a Christian boy to imitate?—*New York Evening Post.*

What our Athletic Association wants is a good football team consisting of six professional players as Ann Arbor has, and also a 237 pound center rush. We want five coaches from eastern colleges. We want to "hog" the opposing teams as Denver did, and to keep a man like Toomey, or one who has taken lessons under him, and then insist upon having him act as referee.—*Journal, Kansas State University.*

There is always much betting on the result of football. It is estimated that \$100,000 changed hands at Springfield, \$7,000 having been lost by a single college student. Perhaps here is one explanation of the large attendance and intense interest. There was money at stake. Christian young men may well question whether they will join in a contest that is sure to be used for wide extended gambling, and a Christian college may well consider whether it should allow its young men to abet this growing vice of the times.—*Chicago Advance.*

The season just closed has been productive of more than its share of accidents, and there should be some legislation this winter with a view of doing away with some of the evils which have crept into the game. The greatest of these is the so-called flying wedge. To see a compact mass come thundering at a line and strike it makes one's hair almost stand on end. The flying wedge has been accountable for many of the numerous casualties of the season, and the press and public are right in demanding that a game that draws into it the very pick of our school and college men shall not be allowed to become unnecessarily dangerous.—*Chicago Tribune.*

The overseers of Harvard University have appointed a committee to consider whether or not football playing is brutal and should be forbidden. A day or two after the appointment of this committee, Harvard played a game with Pennsylvania in which the wrist of one student was broken and another was taken to his home on Commonwealth Avenue with a serious injury, suffering apparently from concussion of the brain. The same day in a game in Franklin Park, Boston, a boy of seventeen was nearly killed. Three physicians worked over him for an hour. His neck was swollen and discolored. At last accounts he was hovering between life and death. The same day on Long Island the captain of a football game was carried from the field, and concussion of the brain is feared. Ought not the law stop this murderous sport?—*Chicago Advocate.*

Football has become a popular craze. It thrusts college young men alongside the ranks of prize fighters. The notoriety given to the players is harmful to them. The very large income it brings into the treasuries of collegiate associations promotes extravagance and wastefulness. The demoralization which followed last Thursday's game in New York, though doubtless the number of students who disgraced themselves was much less than was reported in sensational newspaper accounts, was swelled by a crowd of roughs who wore the college colors, and the reputation of the colleges had to suffer for their lawlessness. The bruising and slugging and gambling are much too nearly parallel with prize-fight records. The West Point authorities have forbidden the students of that institution to engage in any more games with outside organizations.—*The Congregationalist.*

One feature of the game certainly needs reforming. Players should restrain their angry passions, so that there may be no slugging matches; restrain their ardor, so that the good, old game, while it may continue to be a test of skill, strength, and finesse, shall not be degraded by displays of cruelty and brutality which one expects to witness in the prize ring or at a bull fight, and so that life and limb shall not be endangered by reckless exercise of brute strength. It is certain that if there be not some check placed upon these practices the days of football, one of the best American games, soon will be numbered, and other pastimes will take its place which can be witnessed without a chance of being offended or shocked by acts of downright brutality. The fatalities which have occurred this season, and the large number of young men who have been maimed bodily and disfigured, plead eloquently for a reform in the methods of the game.—*Chicago Tribune.*

A Word Fittly Spoken.

Had I a daughter to train, said a woman of the world, one accomplishment above all should be taught her—to make herself agreeable without descending to make fun of other people. Much, if not most, of the fun, current among young folks consists of picking others to pieces. Bright people are given to use their wit very freely upon others who have the misfortune to come near them. Women especially regard the world outside their immediate circle as created to afford them amusement not of the most amiable kind. They are not discriminating enough to see what underlies and offsets the peculiarity which provokes their fun. The ill-dressed, hurried woman is commonly trying to carry affairs whose burdens her critics would shirk shamelessly. No wonder if the brave spirit steps awkwardly and unbecomingly under the load she can but just bear without breaking. Those who bait their fun on her must laugh and laugh again unheedingly.—*Chicago Tribune.*

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 The Experiment Station should be addressed through the Secretary.

BEHAVIOR OF SOME LEGUMINOUS TREES AND SHRUBS IN THE COLLEGE GROUNDS.

BY PROF. S. C. MASON.

CYTISUS LABURNUM has proved quite tender during our severe winters, killing back to the ground and losing much of the terminal growth even in the mildest seasons. It has not flowered with us thus far. It makes a rapid growth during summer, when its silvery-green leaves form an attractive bush. Has been but little effected by the severe heat and drought of the past season.

Cytisus capitatus, a low, dense-growing shrub with very hairy leaves, and conspicuous yellow flowers during May and June. It is killed back more or less during the winter, and growth from the old wood is apt to be rather ragged and uneven. For this reason the best effect is secured by cutting back severely every spring. The fading blossoms and brown pods give the bush an untidy appearance at best. Continues to make abundant growth during the driest seasons, and is attractive for holding its green color so late in the fall.

Amorpha canescens, the lead plant or the "shoe string bush" of the prairie settlers. This is a small shrub of spreading habit, and seldom exceeds three feet in height. From having the tops annually burned off a hard, knotty crown is often found at the surface of the ground, below which the round, slender roots penetrate the soil to a great depth. The compound leaves are three or four inches long, the leaflets are small, oval, thickly set, and densely coated with white hairs, giving the bush a silvery-green effect which is very attractive. The dense flower spike of small purple flowers, with the yellow anthers projecting, give the appearance of gold powder on the purple ground. The prairies present few more beautiful sights than a wide stretch of this shrub in full bloom.

Amorpha fruticosa grows to a height of six or eight feet, and abounds along water courses and where the ground is the least springy. Its habit is somewhat straggling, as it grows naturally, and it needs pruning back into a compact form to secure the best effect. The leaves are coarser, darker green, and the flower spike larger than in *A. canescens*.

Indigofera dosua is an Asiatic species much resembling the *Amorphas*. The plants kill back to the ground every winter, but the growth in the spring is rapid. The foliage, finer than either of the *Amorphas*, is of a delicate bluish-green color, and very graceful. Short spikes of the purplish, pea-like flowers are borne continually through the early part of the summer. The plant seems to stand dry weather and heat remarkably, keeping fresh and bright while much around it was scorched and brown.

Robinia viscosa, the Clammy Locust. The name is derived from the sticky twigs and young leaves as it is making its spring growth. Young trees of this make a good growth, though less rapid than *R. pseudacacia*. They seem perfectly hardy and are not effected by heat or drought. The large, showy panicles of rose-colored flowers appear about the middle of May, and during the blooming period the trees are objects of great beauty. In foliage and habit, they are not equal to the honey-locust.

Robinia pseudacacia, the black locust. No trees of the College plantations make so rapid a growth for the first few years as this. But for the fact that they are attacked by borers, this would be one of our most valuable trees for timber plantations. The habit of sprouting up from the roots renders it unsuitable for lawn planting, where but for that it would be welcome for its abundant clusters of fragrant white blossoms, and its feathery, graceful foliage.

Gynocladus Canadensis, the coffee bean, is a tree of rapid growth, and one very desirable for lawn planting. The graceful habit and airy foliage of a nicely grown specimen are not soon forgotten.

Gleditsia triacanthos, the Honey Locust, is, next to the white elm, one of our best street trees. The unsightly crop of pods is an objection not easily met in advance, but the male flowered trees are free from this. Specimens quite free from thorns are often found in the woods, and such may be secured for planting with a little care. The Asiatic species, *G. sinensis*, has stouter and less numerous thorns than our type and less slender branches. Specimens of this may be seen near the entrance to the main walk.

Cercis Canadensis, the Red Bud, announces the advent of spring each year by its mass of crimson bloom before the foliage appears. The delicate waxy texture of the leaves make this one of the prettiest of small lawn trees through the summer. The Japanese spe-

cies, *C. Japonica*, with us grows only to a small shrub, with somewhat larger leaf and flower than the American form.

Colutea arborescens is an erect shrub, with pleasing pea-green foliage and abundant bloom; the rather large pea-like flowers are bright yellow or maroon, and quite showy, while the loose bladder-like pods earn for it the name of Bladder Senna.

Caragana arborescens, or Siberian Pea tree, is a somewhat shrubby and slightly spinescent tree, earning well its common name. The yellow flowers are abundant, and followed by small round pods. The feathery pinnate foliage is beautiful in the early part of the season, but fades somewhat during hot weather.

Cladrastis tinctoria, or Yellow Wood, is a small and very graceful tree, making a choice lawn specimen, but requiring a partially sheltered situation.

Sophora Japonica makes a slow growth except under most favorable conditions, and many of our specimens have been repeatedly killed back by what appears to be a species of the blight. The largest specimen is near the green-house, and is sixteen or eighteen feet high. This has flowered twice, blooming late in summer, but both flower and fruit may be regarded as more curious than beautiful.

FARMERS' INSTITUTES.

BY PROF. C. C. GEORGESON.

THE season for institutes is at hand. Are you prepared to make the most of it? The popular name, "farmers' institute," denotes an organization holding meetings for the mutual enlightenment of the members in the business of farming. Is there such an organization in your neighborhood? If not, why not? There is no other object of so much general interest to the people in any neighborhood. There is no other subject in the discussion of which all can join with so much unanimity of feeling, and in which all can take part and contribute from their experience to the general fund of information; there is no other interest which, if the proper feeling exists, can draw the families together in so large numbers, for mutual enjoyment and edification; and, if rightly conducted, nothing else, not excepting the farm paper, will be so effective in promoting good farming and good neighborly feelings. An institution with such possibilities ought not to languish. If for any reason no institute has as yet been organized in your neighborhood, you will receive the thanks and appreciative help of your neighbors and friends if you take the initiative in starting one. Interview half a dozen of the leading men on the subject, and get them interested in the matter, then issue a call for a meeting of all those who may be interested in the subject, and at this meeting form an organization and fix upon date and place for the holding of an institute in the near future. The organization made at this preliminary meeting can be of a temporary nature; the main thing is to get to work. Appoint a committee of not less than three nor more than five to arrange a programme for the coming meeting, and who should also engage speakers from the outside, when it is possible to obtain them, as well as from among the home talent, and who should see to the advertising of the meeting. It is important to get good men to take hold of this matter, for the success of the institute will depend upon their work. They must in a certain way be enthusiasts in order that they can inspire enthusiasm in others, and themselves be willing to give some time and trouble to perfect the arrangements. If the meeting is a success the people will take steps to perpetuate the organization and the institute may then be said to be well launched on its career of usefulness. We have many such organizations in Kansas, some of whose meetings it has been my privilege and pleasure to attend; and it is the beneficial results that I have seen flow from these meetings, which prompt me to advocate the organization of an institute in every farming community in the West.

As to the work of the institute itself, the first essential element of success consists in having a good presiding officer. He ought to be a man of good judgment and kindly instincts, and it will be all the better if he is versed in parliamentary usage. He should be able to keep the work in hand running smoothly. One who can courteously and yet effectively hold those in check persons too fond of hearing themselves talk, and who, on the other hand, can bring out for the benefit of the institute the experience and valuable information which he may know some of his bashful neighbors to be in possession of. The program should all be arranged beforehand and

promulgated in the local papers, and copies should likewise be struck off for distribution by mail and at the meeting. The arrangement of the program has much to do with the success of the meeting. The committee having the matter in charge should decide upon the number of sessions that are to be held, and this again will depend upon the number of speakers that have been secured and the interest the people take in the matter. It is rare that the institute is of more than two days' duration, though in some localities the meetings cover three days. It is best to have three sessions daily, one each in forenoon, afternoon, and evening. The subjects should be so arranged that the addresses which are supposed to be of the greatest interest should be delivered to the largest audience. The ladies should be encouraged to appear on the program, and they can usually best attend in the afternoon and evening. It is best not to have the program so crowded with papers that it does not allow sufficient time for discussion. The discussions are usually the most attractive feature of the institute. They bring out the experience of the members, promulgate new ideas and make it possible to look at the question from every point of view. Again, the subjects ought to be so arranged that papers dealing with the same general interest should follow each other, in order to make the discussion fuller. Thus, one or two sessions might be given up to stock-raising; other sessions to grain-growing, etc. It will add interest if a little music or perhaps a recitation or two, is sandwiched in between the more solid food. Especially will these features be appreciated at the evening sessions, when the townspeople are apt to attend in force. But bear in mind that diversions of this nature are to be used only as condiments which may enable the audience to relish the viands better. Don't carry the recitation business so far that it becomes the leading feature and the discussion of agricultural questions a mere side-show. A tendency to do this may sometimes be absurd. If time permits, it is a good feature to devote an hour each day to social intercourse, on which occasion lunches may be partaken of by those who think this diversion proper. At large meetings, where the discussions become general, it may be necessary to limit each speaker to, say, five minutes, in order that all who have something to say on the subject may be heard. If sufficient interest has been manifested, take steps for a permanent organization before adjournment, and possibly arrange for another meeting at such time as may be thought proper. At any rate, a presiding officer and an executive committee should be elected, whose duty it should be to see that the interest does not flag, and with whom the responsibility for future work may rest.—*Kansas Farmer.*

LEARNING WHAT WE DON'T KNOW.

BY MAGGIE CORRELL, '96.

SOME one has said, that in order to become truly wise, the first thing necessary is to learn that we don't know anything; and it is this first step, that we find it takes so long to learn. Yet, as another has expressed it, "The wiser we grow the more we realize how little we know;" or, in other words, proportionately, as we gain knowledge through study, and exertion and application of the mental faculties, our minds are developed, and made capable of comprehending better and better the vast amount yet to be learned, and of appreciating the "smallness" of our knowledge compared with what we don't know.

We can trace this development all through life. In childhood, the undeveloped mind, content with ABC's, a few numbers, and object lessons as its only food, lives in a world of blissful ignorance of the higher arts and sciences; with reading, writing, and the ability to add, subtract, multiply, and divide as the highest ambition. But as these attainments are acquired, new and broader fields appear, with their branches, leading on and on, till the ABC's are spun into the tangled web of literature and languages; the simple numbers have added, subtracted, multiplied, and divided themselves till they have become complex mathematical problems; and even the object lessons have grown into the basis of some perplexing scientific question.

Then begins the dawn of truth, revealing the fact that wisdom is a wide-spreading, endless field, of which we own so small a portion that we can easily believe that "no one ever gets so old or so wise that he cannot learn something." And the wisest men have told us that when we have learned this, we have conquered the greatest obstacle in the way of our education.

Then we may wonder, if this be true, why it is we are not permitted to know so valuable a truth without the long process of learning it for ourselves?

But when we stop to consider, we cannot but conclude that all has been wisely provided by the Fountain-head of all knowledge; for, were the surprise of seeing greater things to come each time we master a subject removed, the search for wisdom would lose half its charm. If we could see the full extent of the task we undertake in attempting to know what is to be known, and at the same time see our own ignorant condition, we should wither under the scorching rays of despair, pronouncing the pursuit of an education a hopeless task. As it is, we hopefully work on, doing our best and saying with the old philosopher, "If the object of life is to do good, life is too short; but if only to gain knowledge, it is longer than necessary."

A STANDARD PITCH.

BY PROF. A. B. BROWN.

SOUND is the sensation excited on the brain, through the ear, by the vibrations or motions to and fro of the particles of a sounding body.

Musical sounds—tones—are the result of regular or periodic vibrations acting on the ear, while noises are the result of irregular and flitting vibrations, alternately fast and slow, or by combining tones in an arbitrary manner, as when striking the piano keyboard with the hand.

The essential attributes of tones are the elements of rhythm—loudness and length, pitch, and quality. Pitch is due to difference in vibration, and is that attribute of sound by which we distinguish it as high or low; high being a greater, low a less number of vibrations, and is well represented by the keyboard of a piano or organ, going toward the right ascending, or high pitch; going toward the left descending, or low pitch.

Pitch is also distinguished as concrete or discrete, as absolute or relative.

Concrete pitch is ascending or descending by sliding, as when the finger is slipped upward or downward on the bowed string; discrete, slipping up or down, as when the fingers stop it at different points. Absolute pitch is the pitch determined by the number of vibrations of the tone, and named by the letters *a, b, c, d, e, f, g*, and modifications. For example, the key-board of the piano, seven and a fourth octaves, is thus named: the contra bass and lowest octave, large capitals,—A, having a pitch of $27\frac{1}{2}$ vibrations;—the next octave above, small capitals; next, small letters; next small letters underscored—A—440 vibrations, Helmholtz, or 435 vibrations French pitch,—adding an underscore for each higher octave, the highest *c* having pitch of about 4224 vibrations per second.

The seven letters, or syllables, are all that are necessary to distinguish the fifty-two white and thirty-six black keys, because the vibrations of every eighth is double the number of the first, and the octave, or the tones comprised between one and eight, inclusive, have the same pitch relation, irrespective of absolute pitch.

Each series is called a scale or ladder, when taken continuously, the extended scale; and the tone bounding it, resulting from doubling the vibration of the first, is called the eighth; and when C of the piano key board is taken as one, the order of intervals is called the major diatonic scale. The letter of absolute pitch upon which one is placed is called the key, or point of support of the scale; hence the importance of having a standard of pitch that would be universally recognized and adopted.

The French have done something in this direction. In 1859 a special commission appointed to determine a standard pitch, reported in favor of the "Diapason Normal" of the Conservatory of Music in Paris. This pitch has a vibration-number of 435, and is that point of pitch given by the second open string of the violin—the tuning note for orchestras—and corresponds to A—3—(or one line A) above middle C of the pianoforte.

This pitch, however, is not universally employed, even in France, as the Government has no power to enforce its use, except in the schools, theatres, and conservatories which it subsidizes.

The pitch varies not only in France, but in this and other countries, and in different cities of the same country. One hundred years ago the average pitch was much lower than now. The church pitch, in Mersenne's time (1647), was A—3—373.7. The so-called chamber pitch was 402.9. Mozart's pitch was a little less, being 421.6. The vibration-number of the A fork used by Handel in 1751 was 422.5. In 1834, the German Society of Physicians assembled at Stuttgart, and adopted as a standard of pitch 444.

Since Mersenne's time, as is apparent from the above, the rise in pitch has been very great. In England, for instance, in spite of all the efforts that have been made to keep it down to A—444, orchestra

and pianoforte pitch has risen from 449.7 to 454.7. In New York, pitch, in some instances, has gone up as high as 460.8. A Chickering piano is tuned by a standard fork, which gives A—451.7, and a piano by Steinway is tuned to A—458. Between the pitch of Mozart and that used by Chickering and Steinway there is a difference of between thirty and thirty-one vibrations, or about three-fourths of a tone.

The difficulty of rendering the work of the great masters, on this elevated pitch, is especially apparent to vocalists, for all must be sung more than a semitone higher than was intended by the author. This change of key also greatly modifies the emotional effect.

There are obstacles in the way of adopting a lower pitch as a standard, however. Not the least of these will be found in the animus of our orchestras and military bands. As instruments, especially wind instruments, have more brilliancy of tone when tuned to high pitch, popular taste, for this reason, demands of the manufacturers of these instruments such pitch as will insure this quality.

Efforts have been made to avoid these fluctuations of pitch, with their consequent annoyances, by having a standard that would be universally recognized. A step in this direction was made by an international conference of musicians held in Vienna in 1858, when the French pitch was adopted. The French pitch was adopted by Russia in 1860, by Spain in 1879, by Belgium in 1885, by the Royal Academy of England in 1885, and by the English Society of Arts in 1886.

At a meeting held by "The Piano Manufacturers' Association" of New York and vicinity, November 6, 1891, French pitch was selected as the standard, and it was "Resolved, that the standard musical pitch adopted by the piano manufacturers of the United States, giving that A which vibrates 435 double vibrations in a second of time at 68° Fahrenheit, shall be known as the 'International Pitch.'"

THE DANGERS OF POPULARITY AMONG STUDENTS.

BY PHOEBE L. TURNER, '94.

TO be popular is to hold the key to the hearts of men." If this key is used to unlock hearts and lead them up higher, it is a great thing to possess; but when it is not used as a means for this end, then it becomes a dangerous thing, and its possessor is apt to become a slave to his love of approbation.

In the first place, the popular student is one who is pleasing to a variety of temperaments; to be this, he must be able to adapt himself readily to them. In short, he must follow implicitly the mandate, "When you are in Rome do as the Romans do." Now one can easily think how, through the love of approbation, he might carry the practice so far as to give up his own standards of right and wrong, and be borne along by the sentiment which his associates happen to entertain. Thus, like a good ship which has lost its anchor, he is at the mercy of the wind and wave, and may at last be driven out upon the sea to his own destruction.

We all love to be appreciated, and in proportion to the degree of popularity we possess we may be in danger, too. Let us remember that popularity should be a means for an end, not the end for a means.

Broad Tires—Good Roads.

The wagon rolled over the road should be a road-maker, not a road destroyer. It ought to conserve hauling the heavier than the lighter load. The broad tire does this. In France are found the best roads in Europe, and over them roll only the wheels of broadest tires. It is the law there that the load shall be distributed over the largest possible surface consistent with the weight carried, the power and the needs of the people to wheel loads to market. The tires of the French market wagons are all the way from three to ten inches in width. The greater number are from four to six inches. There, too, the hind and forward wheels do not track. Each pair of wheels tracks alone, and thus the combined width of four tires serve the purpose of a road roller to keep the roof of the road smooth, compact and free from cutouts, or what are generally known as chuck-holes.

In Ontario the Department of Agriculture advises that for wagons without springs the tire should never be less than two and a half inches in width for a load of from 500 to 1,000 pounds on each wheel. For loads of from 2,000 to 3,000 pounds, to the wheel each tire should have a diameter on the face of not less than six inches. This recommendation will be adopted in Ontario this winter. It ought to be adopted here.

We need such regulation more than it is needed in Canada. But no ordinance of this kind should be imposed upon the people at once. It must be applied gradually, so that owners of vehicles can accommodate themselves to the new rule without suffering heavy cost. The adoption of the system will at once manifest its economy when it begins to come into use for it is a money-saving device for all who contribute to the construction and maintenance of good roads.—*Colman's Rural World.*

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address, E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

There will be no INDUSTRIALIST next week.

Several old students have already arranged studies for a return to College next term.

Regent Secrest dropped into chapel yesterday morning, and spent a few hours looking about the college.

The huge smoke-stack of the steam plant is completed, even to the fitting to it of the two-thousand-pound iron cap. The building itself is practically finished, but cannot be used this winter.

The students on Wednesday morning elected Misses Rena Helder and Stella Kimball and Mr. G. L. Christensen to represent them on the editorial staff of the INDUSTRIALIST during the Winter Term.

The new chimney for the Steam-plant, just completed, is a noticeable monument in the College landscape. Its symmetry is the occasion of universal remark, and the general workmanship does credit to the builders.

The annual meeting of the State Board of Agriculture, Jan. 10th to 12th, presents an extended program of good subjects. The College is represented by Regent Wheeler, Pres. Fairchild, Professors Georgson, and Mayo, and Mrs. Kedzie.

The INDUSTRIALIST has a very good article entitled "Systematic Gymnastics vs. Football," written by Prof. J. D. Walters of the Agricultural College. The article is very good, and deserves the considerate attention of all our colleges.—*Bethany Messenger*.

Prof. Walters deserves credit for the unique drawing from which an engraving was made for the cover page of the "P. M." banquet programs. The Printing Department is responsible for design and execution, and it is said that both received only favorable criticism. For "the boys'" sake, we are grateful.

The rumor comes that Mr. A. A. Stewart, Superintendent of Printing at this College from 1874 to 1881, is appointed Superintendent of the State Asylum for Deaf and Dumb at Olathe. Mr. Stewart has shown a good business ability in his past work, and will carry to Olathe a clean record for upright dealing and honest energy.

The Faculty have announced as a rule, "No body of students shall engage in contests with other than local organizations without the consent of the Faculty." It is understood to discourage all planning of contests in athletic games outside the local associations, where such games are genuine sport. The maxim of this College, "Attend to business," is inconsistent with the excitement and distraction of such contests.

Prof. J. W. Rain, Assistant in English in 1891-2, was greeted with pleasure by the Faculty and students at chapel Wednesday morning. His reading of selected scenes from the Merchant of Venice on Tuesday evening in the Presbyterian Church was attended by a large circle of interested and delighted friends. Prof. Rain is enjoying a brief vacation from his teaching of English literature and elocution at Oberlin College. He was the guest of Pres. Fairchild and Professors Olin, Mason, and Jones during his stay.

Examinations of Thursday and Friday brought the usual succession of grief and triumph that gives so good a trial of ability, endurance, and self-control in every course of study. Regarded as a definite part of the term's work rather than a mere test of success, the examinations are a genuine advantage to students. As a mere sifting process, they do their work fairly well; but are too costly to both student and teacher to be maintained for that reason chiefly. They are an excellent means of cultivating the student's acquaintance with himself, and of showing to the teacher the effects of his teaching.

GRADUATES AND FORMER STUDENTS.

L. P. Brous, '86, called at the College on Monday.

Mrs. Belle Selby Curtice, '82, now of Kansas City, Mo., visited the College yesterday.

P. H. Fairchild, '86, presents greetings to classmates in behalf of his daughter Ruth, born December 22nd.

Lora L. Waters, '88, and G. W. Smith, '93, were elected today to fill vacancies in the Manhattan City Schools.

Do not lose sight of the fact that all animals on the farm are kept for profit. It should not be satisfactory to keep animals through the winter at a standstill, looking to the spring and summer for the increase. The winter is the season when the greatest gain should be made, as the labor can then be more conveniently bestowed to the care and feeding of stock.

A "Fad" Party.

The Faculty and their wives, with the graduates employed at the College, were the guests on Wednesday evening of Prof. and Mrs. Olin and Mrs. Kedzie.

Each guest was asked to wear in a conspicuous place a token of his or her particular fad; and the number and variety indicated were a revelation to all present. A certain well-known figure in College circles confessed by the wearing of his note-book suspended from a ribbon to what has long been suspected by dilatory students as a penchant. Another, who pins his faith to soy beans, pinned the beans to his coat lapel, while the badge of another, whose tastes run in the same direction, wore a badge consisting of a raisin, the figure of an impatient driver of hogs who cries "soy!" and underneath the words bohnen, fabae, bonnes. A collection of old coins, gathered in a piece of netting and worn as a watch chain, testified to the numismatic tastes of one gentleman, and another showed at least one of his fads in a display of old postage stamps on collar and shirt front. A gentleman who thought of the near approach of Christmas and the demands upon the exchequer incident thereto inscribed in large characters on a card the words "Pay Roll," and on the other side the same significant words in behalf of the partner of his joys (he has no sorrows). One gentleman considered the whistle he wore "drawing" to the boys, and the mirror "drawing" to the girls—and he wasn't far wrong. A "health club" received considerable free advertising by a gentleman, and another wore a number of small, fine machine tools. Of the other gentlemen, one spent a happy evening in company of a miniature pair of fowls, which, if he heeds the wishes and warnings of wife and neighbors, will be as far as he will carry his operations; one carried a small Christmas tree, ornamented with "belles." An absorbing interest in electricity and its applications was uniquely indicated in a small incandescent lamp in the center of a flower, a small storage battery suspended by the wearer's side furnishing the light. A small leyden jar with connecting wires showed another's bent. Three sportsmen boldly proclaimed their loves—one for dog and gun by miniature figures, one for the seductive pastime so highly recommended by the lamented Isaak Walton, by a badge made up of artificial flies, and the other for tennis and baseball by carrying the spheres used in the games. One liked a good jack-knife, but in the motley collection he exhibited from the College "lost drawer" there was not one to deserve the adjective. A bachelor gloried in a display of pants buttons and needle and thread, but wisely showed no thimble. Ribbon photographs indicated the hobby of the ever-present amateur photographer; a travelling bag, rolled umbrella, and railroad guide showed how another would indulge his tastes were money and passes more plentiful, while another indicated the extent of his desires in a collection of shells. A scientist showed interest in his line by a tiny tetrahedron representing anatomical arrangement of molecules.

The ladies rode their hobbies gracefully, and there were few exceptions to their feminine character. One delighted in the making of pretty shopping bags from silk and satin; two "doted on" souvenir spoons, and another on souvenir glasses; one was especially fond of roses, another of chrysanthemums, while another evinced a fondness for foliage plants and ferns, and yet another included in her list all flowers. One was devoted to tatting, which she made at intervals during the evening. One carried a tiny bottle of oil which told as plainly as could be that she tried to have things run smoothly. Bicycling, bread-making, china collecting, flower collecting, poultry raising, horseback riding, ocean traveling, boating, tennis, letter-writing, athletics, embroidery, each had its devotee. A young lady of æsthetic tastes testified to a passion for sunflowers, and the preparation of onion extract interested another. Microscopic fungi had charms for one, while two specimens of the genus Young America worn in the hair of a matron needed no explanation.

Of course conversation was easy—for who can't talk on his hobby? The inspection and comparison of fads caused the time to pass swiftly.

The evening was well gone when the tempting refreshments were served, and it was at a much later hour that the guests departed.

The "P. M." Banquet.

As has been the custom for a number of years past, the "P. M." boys last evening held their banquet to celebrate the conclusion of "P. M." work. The Odd Fellows' hall had been secured for the occasion, and early it was filled with a merry company consisting of professors, assistants, and students.

At eight o'clock Toastmaster Holsinger took the floor, welcomed the guests, and opened the program by introducing Messrs. Lyman and Conrad, who rendered a pleasant guitar duet.

Mrs. Kedzie, in the toast "Boys of '95," said that in her extended experience of toast making it had never been her duty or privilege to toast boys, although she had "roasted" some. She set forth the necessary characteristics of a good toast, and ended by saying that she felt sure that the boys of '95 were possessors of those characteristics.

Prof. Popenoe responded in a toast "Girls of '95." The Professor seemed thoroughly acquainted with his subjects and had their names with complimentary remarks knitted into a pleasing poem, which concluded with a wholesome admonition to the boys of '95.

Next was an organ and violin duet by Miss Wilson and Mr. Fryhofer.

In the toast "What Does 'P. M.' Mean to Us?" Miss Hortensia Harman traced the evolution of the meaning of "P. M." to her from childhood to the present time, when it meant to her honest, upright, industrious, and intelligent young men.

In the response, Mr. C. A. Johnson eulogized the work, bringing out forcibly the meaning and advantage of "P. M." to the boys.

Messrs. Lyman and Conrad varied the program with a well-rendered guitar duet.

The toast "Our P. M. Bosses" was presented by Mr. J. V. Patten, who described the characteristics and qualities of the bosses, and in a heartfelt and emotional manner told of the love and admiration of the "P. M." boys for their bosses. His feelings getting the better of him, Mr. Patten concluded.

Mr. Geo. Fryhofer favored the guests with a vocal solo suitable to the occasion. Being heartily encored, he responded with an impersonation of an old-time school teacher, with which he captivated the audience and brought forth a continuous roar of laughter.

Then followed the most pleasant part of the program, the supper prepared under the direction of Mrs. Kedzie. The guests were waited upon by the boys of '95, who from their bounteous store satisfied the longings of the inner man.

After the feast the company spent the remainder of the evening in a social chat, listening to the strains of "magic music," etc. At 11:30 the company departed, pronouncing the Banquet of '95 a success, and an occasion long to be remembered, especially by the "P. M." boys.

COLLEGE ORGANIZATIONS.

December 15th.

The Ionian Society was called to order directly after chapel by Pres. Lyman. The opening exercises consisted of congregational singing, prayer by Miss Wilkin, and roll-call. The program opened with a declamation by Miss Bayless which showed careful preparation. This was followed by an interesting number of the Oracle edited by Miss Carleton, the motto of which was—

O, seize the instant time; you never will,
With waters once passed, impel the mill.

Misses Mary and Gertie Lyman and Minnie Spohr favored the society with a trio. The members who were to debate on the affirmative both being absent, the Society went into a committee of the whole to consider the delinquency of these members. After this committee had reported, Miss Louise Spohr read an original story which closed the program. I. R. F.

December 16th.

The Websters came to order 7.30 at the call of Pres. Ames. After roll-call, showing a large attendance, J. V. Patten led in prayer. A very interesting debate followed on the subject, "Resolved, that agriculture has done more toward civilization than commerce." The question was argued victoriously on the affirmative by G. A. Dean and T. P. Van Orsdol. S. Dolby and T. M. Robertson presented the negative. Mr. Morse then read a very humorous essay on "A Dream," followed by Mr. Amnell with a declamation entitled "Woman's Curiosity." J. W. Evans, as music committee, furnished the Society with musical entertainments somewhat out of the usual line. H. G. Pope read a very interesting number of the Reporter. W. T. Taylor discussed "P. M." work and invited the Society members to discuss the subject more fully. In the discussion that followed Mr. F. C. Sears and two or three "special" P. M. boys expressed their opinions. Considerable time was spent under unfinished and new business, and the Society adjourned its last meeting for the term at 10.40 p. m. E. H. F.

December 15th.

The Alpha Beta Society met for its last regular session this term. Pres. G. L. Christensen in the chair. The program opened with a quartet, "Greeting Glee," by Misses Cottrell, Messrs Harling and Ridenour. Prayer, Sarah Cottrell. C. B. Harling delivered his declamation in an attractive manner. "A trip to Topeka" was the title of Little Rigney's well written essay. W. N. Coffey favored the Society with a declamation, descriptive of the racing Locomotives, after which, the question: "Resolved, that pride and ambition do more harm than ignorance and superstition," was argued on the affirmative by C. C. Smith and Elsie Waters. The negative was presented by Inez Palmer and R. W. Rader. The affirmative showed by numerous examples the harm caused by pride and ambition. Arnold's treason was the result of selfish pride and ambition. Standing on the narrow platform of pride and ambition, Napoleon terrorized the whole of Europe. Lord Byron is an excellent example of a man whose ambitious pride was never satisfied. The desire among military chieftains to gain for themselves notoriety has caused them to betray a trust, disobey a command, the result, untold misery by loss of life, the loss of a battle which resulted in the downfall of a nation. The negative that, although pride and ambition had slain its thousands, ignorance and superstition had caused the death of millions. Ignorance and superstition has pervaded all ages over shadowing them with darkness. Religious worship to a great extent in the past has worn the garments of superstition, enslaving its followers. Governments have been enthralled by the superstition of the age, and many thousands of lives have been offered as a sacrifice to a something they know not of. Witchcraft is a souvenir of the superstitions of all preceding generations. Its awfulness we cannot help but realize. It is the fear of this unknown something which places man on a par with animals of lower intellect. Missionaries are sent among savages to teach them the follies of ignorance and superstition, not the fostering and perpetuation of them. The Judges gave their decision in favor of the affirmative. The Glenner pre-

sented by W. H. Phipps was a model number, containing many thoughtful productions, with the funny pieces agreeably interspersed. After recess, a quartet, "Farmer John," by Misses Smith and Rigney, Messrs Fryhoffer and Clothier. "Calisthenics" was the subject of an extemporaneous speech by Cora Thackrey. Grace Secrest gave an interesting discussion on the character and life work of Dorthea Dick. A resolution was adopted extending to Mrs. Kedzie, Mrs. Winchip, Profs. Olin, Brown, Failyer, and Nichols, and Mr. Baxter. The grateful thanks of the Society for their kind assistance in the Annual Exhibition. Messrs. Yoeman, Kimball, and Painter, and Misses Marlatt and McKeen, cheerfully responded to the call of "speeches by the visitors." Quartet, "Home Sweet Home" by Messrs. Fryhoffer, Spalding, Clothier, and Harling. Adjournment. A. E. R.

FARM NOTES FROM VARIOUS SOURCES.

The agricultural experiment stations are capable of rendering incalculable service to the farmer if properly managed, and they can do this in various ways. They can show him a model farm.—*Mirror and Farmer*.

The experiment stations can help the farmer in solving practical problems for him of the highest utility. The room for this is without limit. Like the story of the fable, it is work that will never end.—*Mirror and Farmer*.

In all the history and theory of breeding nothing seems so much required to be told over and over again as the fact that to breed for a quality it is necessary to breed from animals that have that quality.—*Coleman's Rural World*.

The agriculture of the future will develop possibilities in the way of increased production that are almost undreamed of now. Some of these days we shall see intensive methods applied to the production of grain crops, with results that are now hardly imagined.—*Maine Farmer*.

It is doctor-bill economy to be carrying heavy things from place to place on the farm, imagining one is saving the expense of a wheelbarrow. A good wheelbarrow is as necessary on the farm as a plow. Have one made with a broad tire, so that it can be used when the ground is wet.—*Baltimore Sun*.

Nothing need to go to waste on a well-regulated farm. Even the accumulated rubbish can be burned and the ashes utilized to increase the soil fertility. There is then no excuse for the untidy piles of odds and ends too often seen on farms. They are not only evidence of slack methods, but actually appear to rob the home place of that cheerful aspect that denotes the true home.

This is a time for specialties. In every line of business the man who has a good specialty stands the best chance of success. A profitable specialty in the livestock business, and one that is not overdone, is the breeding of high-class dairy cows for family use. In every town and village can be found buyers who are willing to pay exceedingly good prices if they can procure really good cows for home use.

There is always profit in the concentration of one's energies. Do not try too many things nor to spread yourself over too wide an area. There is no sounder maxim in agriculture than that about a little farm well tilled. Concentrate in every way—in the land that you cultivate and in the stock that you feed. Then you reduce expenses and keep your work in such shape that you can handle it.—*Baltimore Sun*.

If every farmer would determine to obliterate the scrub and use better stock, the wealth of the country would be doubled in a few years. Nothing destroys progress on the farm so much as the expensive scrub. Many farmers have worked hard for many years supporting scrubs, when today they might be enjoying prosperity if they had long ago used pure-bred stock. They have saved the small cost necessary to procure pure breeds, and paid an annual tax to the scrub every year greater than the cost of improvement.—*Baltimore Sun*.

Every farmer knows that bad roads sometimes keep him from town when prices of grain are high, and thereby cost him a good profit, knows how much time he loses by traveling over bad roads and how much larger a load his team would pull if the roads were hard and smooth. Every farmer knows that a considerable item in his annual expense is the repair of wagons and harnesses, whose strength and safety have been crippled by bad roads, and how much more it costs to keep three or four horses instead of one or two, as he might with equal service with a system of good roads.—*Coleman's Rural World*.

Much of the success of good farmers is due to skill in marketing. For this a careful study of the different markets is necessary. The farmer needs not only to be intelligent about his own business, but also to keep posted as to what farmers in other localities are doing. For these reasons he must be a reader of agricultural newspapers. They may not tell him more about farming than he knows, but they give him the views of other practical farmers, and they supply information which enables him to market his crops most successfully.—*Coleman's Rural World*.

Many persons seem to consider that if they can get a good breed of poultry their success at fowl-keeping is assured. This is by no means true. The breed is a good deal, and without the highest quality in this respect maximum profits cannot be secured; but equally important and imperative are good care, good feeding and ample accommodations in the way of housing. It is only by paying attention to these latter features that excellence in poultry has been attained, and any further progress in breeding must be attained by working on the same lines.—*Farmers' Review*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The children of the Lawrence public raised \$242.30 for the poor Thanksgiving week.

Every live teacher will attend the State Teachers' Association at Topeka next week.

Ottawa University has started a Military Company which goes by the name of "University Guards."

The "Holiday Supplement of the Students Journal" of the State University, is a handsome quarto magazine of twenty pages neatly printed and full of good articles and pictures.

Principal W. H. Olin, of Osborne, wrote Superintendent Gaines that the Fifth District would send 500 teachers to the meeting of the State association during the holidays. Rice county teachers are making arrangements for a special car.

The School Board of Topeka has made a ruling that hereafter when the place of a white teacher in one of the colored schools of the city is vacated that it shall be filled by a colored teacher provided there are candidates who are certificated and otherwise qualified.

Chancellor Snow of the State University expects to eat his Christmas dinner in the new Chancellor's residence, which will be ready to be occupied by that time. To judge from the published pictures which we have seen it is a handsome and roomy building well adapted to its purpose. It has cost about \$12,000.

There have been so many cases of tardiness among the teachers at Kansas City, Kansas, that the School Board was forced to issue an order requiring the principals of schools to report the tardiness of any teacher directly to the Board, and also requiring the teacher who was absent or late to make her excuse directly to the Board.

Miss Belle Brown, a Westmoreland school teacher, is a sympathetic and energetic young lady. A little boy's leg was cut off by the train near her school house and Miss Brown carried him to her school room, removed the shoe and stocking from the crushed limb, bandaged it and held the mangled boy in her arms till a doctor came several miles to dress the wounds.

Prof. Lucien I. Blake of the State University reports another invention. His last achievement is the purifying or neutralizing of water by means of electricity. He takes two per cent of salt water and runs a current of electricity through it, forming a peculiar compound. A small quantity of this compound placed in the worst of sewage water will effectually purify it, that is, will remove all the organic matter. The cost is merely nominal. He claims that for \$10 or \$15 about fifty million gallons can be purified.

The Jewell High School is getting a very fine library, and the books are well chosen. Over sixty new ones have been added this term. There is something profitable ahead for the boy who spends his leisure time with good books. It helps him in two ways—keeps him out of mischief and builds him up intellectually. One of the most favorable indications of a boy's future good character and usefulness is his willingness to stay at home after supper. Boys' don't get in the habit of loafing or wasting your time by running a round to no purpose. Everybody who succeeds has to train his hands and mind to work with steadiness and regularity. The habits you form now are likely to stick to you through life. You can be an independent man or a dependent nobody, and you are making the choice right now.—*Jewell County Republican*.

The University Glee and Banjo Club have started on their third annual tour, giving their first concert in Leavenworth. Saturday evening, December 16th, they appeared at Atchison, and after spending Sunday in that city went to St. Joe, Missouri, where they gave a concert, December 18th. From St. Joe they went to Hiawatha, where they gave a concert December 19th. On the 20th they played in Marysville, on the 21st in Frankfort, on the 22nd in Washington, and on the 23rd in Concordia. They will appear in Beloit on the 25th, in Minneapolis the 26th, in Salina the 27th, in Junction City the 29th, and in Topeka the 30th. They will give their last concert in Manhattan New Year's night, and then they will return to Lawrence, where, after resting a few days, they will present their excellent program in the opera house Friday evening, January 15th.

The report of the Kansas Columbian Commission to Gov. Lewelling states that in the educational department Kansas received awards as follows: Douglass county district schools, school work; Leavenworth schools, school work; McPherson schools, high school work; Emporia schools, bound manuscript; Kansas City schools, school work; Kansas City schools, high school work; Atchison schools, class work; Atchison schools, school work; Agricultural College, industrial work; Manhattan schools, bound manuscript; Wichita schools, pupils' work; Dickinson county schools, school work; Shawnee county schools, pupils' work; Mitchell county schools, manuscript of school work; McPherson county schools, manuscript of school work; John McDonald, of Topeka, bound volume Western School Journal; State of Kansas, school work; Kansas State Normal School, model school pupils' work; Kansas State Normal school, students' work; State University, courses of study and work.

Many farmers are weary of hauling water from a neighbor's well for their stock. The time and money thus expended have been great. Enough has already been paid out to more than pay for digging and furnishing a first-class well, and the dry weather still continues. Why not dig one yet? A well that would afford an abundance of water at this time would never fail in ordinary years.—*Orange Judd Farmer*.

Library.

The College library consists of over 13,000 bound volumes about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

MANHATTAN ADVERTISEMENTS.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
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The Experiment Station should be addressed through the Secretary.

FASHION IN FARMING.

BY PRES. GEO. T. FAIRCHILD.

THE fact has frequently been noticed that farming communities change production speedily with little apparent reason. The ordinary fluctuations in particular crops seem enough at times to set a whole State into new efforts for profit by special cropping. It has been a matter of common remark that extremes in the price of hogs or sheep are likely to follow in quick succession from the readiness with which farmers turn from one to either. A famous New York sheep-raiser is said to have given as the secret of his success, the maxim, "Buy when your neighbors sell, and sell when your neighbors buy." The explanation is that farmers are likely to move in crowds under a common feeling that profit lies in the direction sought by others. Often there seems to be no better reason than that our neighbors are doing it. Kansas is still a State where such changes are frequent and striking; but the rest of the country has a similar record.

Mr. John Hyde, expert in agricultural statistics, has recently published, under the title "Geographical Concentration," illustrations of this tendency to do as neighbors do. With reference to the principal grain crops, he presents important facts as follows:—

Indian corn, or maize, is cultivated in this country from the most easterly county in Maine to the most westerly in the State of Washington, and from the valley of the Red River of the North to the confines of the Everglades of Florida. Its area of production is, in fact, more generally distributed than that of any other product except grass, and yet at no agricultural census ever taken has there been less than 38.57 per cent of the total crop of the country produced in what have been for the time being the four leading corn-producing States, while the percentage has been as high as 52.36, and was 50.80 as recently as 1889. The States that stood first, second, and third in the scale of production in 1839 stood tenth, eighth, and seventeenth in rank, respectively, in 1889, notwithstanding that their own aggregate production had increased 41.72 per cent. On so vast a scale is corn now cultivated in a group of States in the Mississippi and Missouri valleys that the combined production of Iowa, Illinois, and Kansas in 1889 exceeded by over 100,000,000 bushels the total corn crop of the country but twenty years before. It was the year 1879, however, that witnessed, so far as can be determined from official statistics, the high-water mark of the tendency to concentration in the cultivation of this favorite product, the production of the States of Illinois and Iowa in that year aggregating the enormous total of 600,816,728 bushels, or 34.23 per cent of the entire crop of the country.

In the case of wheat, the area of principal production has undergone great changes during the last half century. While its center moved steadily westward for forty years, as was the case also with that of the production of corn, oats, and barley, the result of that remarkable redistribution of the productive area which occurred during the closing years of the decade ending with 1889 was that the two States of principal production were as widely separated geographically as they are in their physical conditions, Minnesota leading with 11.17 per cent of the total, and California standing second with 8.73 per cent, while the addition of the crops of Illinois and Indiana raised the proportion to 35.85 per cent. In 1839, 61.52 per cent of the total wheat crop was produced in four States, containing only 5.84 per cent of the entire land surface of the country. In 1889, those same States produced only 15.66 per cent of the total, while four others, containing 11.01 per cent of the entire land surface, produced 35.85 per cent of the total crop.

The cultivation of oats was centralized to so great an extent in 1839 that 56.20 per cent of the total oat crop of the country was the production of four States. Succeeding decennial censuses have found various changes in the area of principal production, until the States that formerly stood at the head of the list have come to make relatively small contributions to the total. At no census, however, has less than 45.41 per cent had to be credited to what were for the time being the four leading oat-producing States. Between 1879 and 1889, the production of oats almost doubled and the enormous increase in the acreage was more generally distributed over the country at large than was the increase in the acreage devoted to any other important product, even the Southern States having a net increase amounting to 705,869 acres. Nevertheless, the percentage of the total crop of the country grown in the four states of the largest production was even greater in 1889 than in 1879.

After a similar showing as to many other crops, Mr. Hyde sums up the importance of mixed husbandry, and notices the trend that way with favor:—

It is only a few years since in the great wheat belt of North Dakota it was impossible to procure butter, cheese, eggs, or fruit that had not been brought hundreds of miles from some leading produce market or some agricultural district that was not so completely given up to a single branch of the industry. Now, however, all this is changed, and mixed farming is in the ascendant. This is equally true of the States west of the Missouri River; indeed, when in 1889 so many parts of the country had a short fruit crop, hundreds of carloads of apples, grown on the but recently treeless plains of Nebraska, were shipped both to New York and San Francisco.

I appreciate the importance to the farmer of his cultivating at least one product that is readily convertible into money, but I fail to see that, taking one year with another, a well-devised system of mixed farming will not yield quite as speedily a return upon capital invested and labor expended as the proportionately more extensive cultivation of one or two products.

When the fashion is fairly set, we may hope to see our Kansas farmers so handling themselves and their farms as to get a larger welfare out of their time and their soil. With many baskets, the risk upon the eggs is lessened; with many products, the comfort of the

household is secured, and a fair recompense for labor is almost certain. With stock to consume the rougher produce, a certain cash income is provided, and the fertility of land for special crops is maintained. Let the fashion grow.

PIONEER EFFORTS IN SCIENTIFIC AGRICULTURE.

BY PROF. J. D. WALTERS.

CONTRASTED with the marvelous development of pure science and the industrial and engineering arts, the progress of agriculture may have been slow, but no one can contemplate the laborious efforts at improving farming and the farmer of the past without agreeing with the poet who wrote, "A glimpse into the olden days lines the clouds of the future with gold."

The first settlers of New England had neither farm animals nor implements. For many generations the plows, harrows, wagons, and carts differed little from those used by the Indians. Up to the middle of the eighteenth century iron and shaping tools had to be imported from England. Life was a constant struggle for mere existence, and even corn, milk, beef, pork, game, and fish, the common food of rich and poor, was not always plenty. Away from the coast there was but little commerce, and agricultural education was not thought of, though feeble attempts were made from time to time to hold agricultural meetings of a social character. During the revolution and the twenty years following, the conditions for advancement grew better, but the energies of the young nation were bent chiefly upon organizing a more efficient defense and better intercommunication. Congress coined money, adopted a fixed system of measures and weights, and developed the postal service,—efforts which only indirectly benefited agriculture. The export of agricultural products to Europe did not amount to much until after the construction of railroads and the establishment of steamship lines. A historian tells us that "in 1784 the commerce of the country was so insignificant that eight bales of cotton, shipped from South Carolina, were seized by the custom authorities of England on the ground that so large a quantity could not have been produced in the United States."

It was not until the second or third decade of the present century that farmers as a class commenced to recognize the importance of comparing seeds, stock, methods of work, and other interests, and began to feel the need of more information for themselves and better schools for their children, though in several of the older States agricultural and horticultural societies were organized quite early, and some of these have shed light to many generations unto this day.

The first "Society for the Promotion of Agriculture" was established in Philadelphia in 1785, followed seven years after by the "Massachusetts Society," and eight years after by similar societies for New York and South Carolina.

The horticultural societies started with that of New York in 1818, that of Pennsylvania in 1827, and that of Massachusetts in 1828. The American Horticultural Society, first known as the American Congress of Fruit Growers, and later as the American Pomological Society, was not organized until 1884. The Kansas State Horticultural Society was incorporated December 15th, 1869, and that of Manhattan, January 24th, 1874.

A main factor in the development of agriculture was, undoubtedly, the "fair," or stock-show. It is reported that the Agricultural Society of Massachusetts had commenced to award premiums for agricultural products before 1804, but the first regular stock-show seems to have been held in 1807. In the autumn of that year Elkanah Watson, a native of Plymouth and a direct descendant of Governor Winslow, who, in 1624, had brought the first "neat cattle that came into New England," procured the first pair of Merino sheep which had been introduced into Berkshire, and gave notice of a public exhibition of his two sheep on the public square of Pittsfield. He wrote that "Many farmers and even females were attracted to this first novel and humble exhibition. From this lucky incident, I reasoned thus: If two animals are capable of exciting so much attention, what would be the effect of a display on a large scale of different animals? The farmers present responded to my remarks with approbation. We thus became acquainted, and from that moment to the present have agricultural fairs and cattle shows, with all their connections, predominated in my mind." On the 1st of August, 1810, an ap-

peal was drawn by Mr. Watson and signed by 26 different persons to hold an exhibition of stock on the first of October. The effort was successful. Next year a second fair was held with "a procession of 69 oxen drawing a plow held by the oldest man in the county, a band of music, the society bearing appropriate ensigns, each member decorated with a badge of two heads of wheat in his hat and the officers three heads, secured by a green ribbon." Mr. Watson as president delivered the addresses and awarded the premiums. It is interesting to read of these first attempts of the people to organize an institution, which last year resulted in such a stupendous undertaking at Chicago, and which in 1883 has been able to boast of a Kansas State Fair with an attendance of over 100,000 people. It is only to be regretted that the real purpose of these agricultural festivals could not have been kept in the foreground.

Much credit is also due to the inventors and manufacturers of implements and to the agricultural press. The pioneer agricultural journal is the *American Farmer*. It issued its first number in 1819, and is still published. The *New England Farmer* appeared in 1822, *Colman's Rural World* was founded in 1848, and the *Kansas Farmer*, in 1863. Today, the number of periodicals devoted to agriculture and the kindred arts, as horticulture, floriculture, landscape gardening, cattle, swine, and sheep breeding, poultry and bee-keeping, horse, sugar, cotton, and tobacco planting, etc., must be far above five hundred in the United States.

Another powerful motor, though its influence has been felt for hardly a generation, has been the establishment of agricultural schools and experimental stations. The history of these schools reaches back to the year 1837, when a Bureau of Agriculture was established, first as a branch of the United States Patent Office, and afterwards as an independent sub-department. In the Patent Office report for 1847, Mr. Charles L. Fleischman made the first elaborate report on agricultural schools which he had visited abroad. The writings on scientific agriculture of the great German chemist Baron Von Liebig, and the rich contents of the "Proceedings of the Royal Agricultural Society of England" were being republished in our agricultural and scientific periodicals and awakened interest in research and experiment. Railroads and steamships commenced the work of cheap and rapid transportation, and farming was irresistibly drawn into the galaxy of regular business enterprise, demanding not only hard labor, but management, foresight, thought, and knowledge. A bill providing for the organization of an agricultural school and the establishment of an experimental station passed the Senate of Massachusetts as early as 1850, but it was defeated in the House. A committee was appointed, however, to consider the matter, and in 1851 their report, with an account of the work and organization of the agricultural schools of Europe visited by Prof. Hitchcock, was made to the Legislature, commencing with the sentence, "The first seed ever planted was the first effort of civilization." The college plan failed, but led to the establishment of a State Board of Agriculture, now a part of the government of every State in America. Six years later Michigan established the first Agricultural College on the Western Continent, and on July 2nd, 1862, President Lincoln signed the "Morrill Bill," an act of Congress granting to each State 30,000 acres of land for each of the senators and representatives in Congress for the "endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." This act gave America half a hundred well-endowed agricultural schools able to educate twenty thousand young farmers and mechanics.

Verily there has been progress since the "Auld Lang Syne."

Farmers' Institutes.

Farmers' institutes have got a long way past the tentative stage. They are now regarded as a power in the land, as far as the education of the farmer is concerned. They are, in some sense, a post-graduate course to him when he is no longer able to attend the school or the college. They bring him valuable information on every phase of his calling. They make him acquainted with the newest introductions in the form of plant growth of every kind. They enlighten him on the best methods of doing work of all kinds. They tell him how to feed his stock according to the most economical and approved methods. They make known to him how to handle his milk so that he may

reap the best return out of it, and they also inform him with reference to the cheapest and most effective way of bringing fertility to his land.

Since these and kindred benefits accrue to the farmers who come to such meetings, it is of transcendent importance that they be persuaded to frequently attend them. As things are now, they are only attended by a very small percentage of the entire number. It is very important that it should be so. The institute staff that can bring information to one hundred farmers can bring information just as easily to five hundred. The size of the company that should assemble at such places should only be circumscribed by the capacity of the building to hold them, and a large one should always be chosen. Notwithstanding, we usually find not more than one or two hundred present at such meetings; sometimes there are not as many. Occasionally we find larger numbers present, but generally it is in the evening, when some form of entertainment has been introduced other than the discussion of agriculture, pure and simple.

How shall the farmers be induced, generally speaking, to attend such meetings? That is a difficult question to answer. The size of the meetings, however, is generally gauged by two things. These are the intelligence of the farmers, and the thoroughness with which the meetings have been advertised. Intelligent farmers make a point of attending farmers' institutes when at all possible. All the readers of the *Journal* attend them—at least, we take it for granted that they do. The chief difficulty is with farmers who do not take any agricultural paper at all.

The thoroughness of the advertising depends entirely upon the officers of the institution, but more upon the Secretary than upon any one else. Where the directors are sufficiently alive to the importance of advertising a meeting properly, it is usually a success. Various methods may be adopted, as by hand bills, small dodgers, and printed postal cards; but after all that can be done in this way, it is necessary that the aid of the press be called in. This is usually not hard to obtain, for, generally speaking, the press of the country is forward in works that are good.

The character of those who address such meetings, and more especially their capacity, should be considered. Weak men at an institute meeting not only kill the meeting itself, but they also kill the meeting or meetings next held in the same place. Injury may be done in this way, sometimes, at our Ontario meetings. The men chosen to speak at these are generally strong, but not always. It would be well, perhaps, to exercise a little more discrimination sometimes in choosing the men who are to form the different delegations. Farmers do not like the idea of listening to those who only tell them commonplace things that they already knew, and in a very commonplace way.—*Canadian Live-Stock Journal*.

A String of Fine Pointers.

Experience is a good school, and one in which even mistakes can be turned to account as lessons with a double meaning. Mistakes are evidences that something is wrong, and the wise man rarely makes the same mistake twice. There are mistakes of various kinds. There are those that do not take the advantage of such circumstances as would lessen labor by adding suitable conveniences. It is a mistake to let the manure lie where the water from the eaves of the stable roof can leach and carry away its best fertilizing ingredients. It is a mistake for farmers to keep a cow that will make only two or three pounds of butter a week, when there are plenty of dairy cows that will produce three times as much and at no extra cost of feeding or care. It is a mistake to feed the swine late in the fall on the new corn nubbins, many of which contain smut, and then wonder how hogs get the so-called cholera. It is a mistake not to take pains in sending fruit to market, to select it so each kind is by itself and the size uniform. It is a mistake for farmers to put off husking corn and then be obliged to work at it in freezing weather.

It is a mistake to postpone making repairs when it is seen they are necessary until actual breaks occur, or cattle pass through the fences needing attention and commit costly depredations. It is a mistake to spread a certain amount of manure on twenty acres when there is only enough for half that many. Such a mistake necessitates more than twice as much labor to secure a crop that would not equal either in quantity or quality that which could be produced with the same manure on ten acres.

It is a mistake to perform any branch of farming in a hasty manner when such a method means indifferent work, which is generally the case.

It is a mistake not to make the farm home the most pleasant, dearest spot on earth to every member of the family. It is a mistake not to take advantage of the wonderful chance always afforded on the farm to beautify the lawn and make the old homestead an object of beauty from all directions. Having half a dozen different farm operations half finished on hand at one time is a mistake that puts the brakes on the road to success.

It is a mistake to wait until the stock suffer from the cold blasts before making the needed repairs at the barns and stables. Fasten the loose boards and batten the cracks and put in the missing panes of glass now, so as to be ready for the unexpected "raw spells" that are sure to come a little too previous, as the saying is. It will be a very unwise mistake to again endure the many inconveniences that last winter's experience pointed out, and which a little work now will readily obviate. Among these inconveniences are unhandy ways of getting hay from the

loft to the mangers, having to use a cutting-box for cutting feed over the cow or horse stables, and being obliged to carry it down to the mixing-box. These mistakes are great time-occupiers, and when the mercury snuggles way down toward the bulb of the thermometer twice as much time as really is necessary to perform a piece of work means unnecessary cold fingers and toes.

It is a mistake to feed the dairy cows by guesswork; measure or weigh their food, and see that each one gets its proper allowance at each feed.

It is a mistake to try to winter a lot of stock on short allowance of fodder, so that none will get sufficient food to thrive properly. Better sell the poorest of the lot and feed the remaining ones liberally. Leaving corn-stalks out in the field all winter is wanton waste, a mistake no economical farmer will make. Good gates should be made for the entrances to every field.

It is a mistake to waste time taking down rail fences and putting them up again; even bars are too slow for this progressive age.

Having things convenient lessens work. Timely attention to needed repairs will often require a few cents expense, when a little delay will cause the necessity of spending dollars. Not having an ample supply of fire-wood cut up ahead is a dinner demoralizer. The fact that very important work has to be stopped or quite neglected to cut stove-wood shows the importance of keeping the supply more than equal to the demand. These are all mistakes that can be avoided. If farmers would sit down and carefully reflect and consider how many mistakes their experience points out to them they could avoid by following business methods they would be greatly astonished to find how much easier their work could be performed, and even the profits increased at the same time. Lessening the expense and work, and at the same time increasing the profits, is business farming. The farmers who think that the methods of generations past are good enough for them are the men who declare farming does not pay. Such methods do not pay, and their mistakes are in not stepping out of the old-time ruts and, as the saying is, "getting in with the procession" of farmers who follow the practical, progressive methods of the present time.—*Baltimore Sun*.

Women as Farmers.

The American woman's intellectual strength and ability to execute can no longer be doubted. By perseverance she has placed herself among the most able physicians, lawyers, and teachers, as well as among our most successful farmers, says Mrs. Thompson Smith in *Hoard's Dairyman*. We have strong, brave, accomplished and refined women who conduct the various branches of farm work so well that history will record their names among the greatest agriculturists, while there are still others who, because of their quieter lives, though truly successful, will not be known to posterity; but they, too, are proving that womanhood is put on by industry, and as nobly and refined, by labor in the rural districts, where it is directing the cultivation of the soil, or in having care taken of cattle, or actually laboring in the poultry-yard or dairy-room, as if put forth at the desk, by the counter, or in the legislative halls.

They are of the band who are breaking down the old-time ideas that idleness and aimlessness are evidences of ladyship. They are proving that womanhood is made in the field of honest employment, and that because their chosen life-work is upon a farm among the buzzing bees and lowing cattle, they are not rude and uncultured.

Farm drudgery, hard times on the farm, the tired, oppressed farmer's wife, low wages, and mortgaged farms have been written on and talked about till too many of us do not see anything but the dark side of farm life, and our daughters grow to think that as a class we are oppressed and poor. They covet city lives. 'Tis true that in leaving the farm much work is left behind, but it is healthful work, and on entering city life in its place is filled by fashion's toils and cares. Read the biographies of the noted; not one had a fashionable mother, but on the other hand they all came from plain, strong-minded women, who had almost nothing to do with fashion's ways. The mothers of Wesley and Channing, of Josephine, Hemans and Stowe are more to be admired than any princess or queen. As the country women grow to love their own calling and cease to hope that their daughters may have a higher or nobler lot than theirs, the daughters will soon see that there is no higher, holier life to be lived than that of a pure, honest Christian farmer. Our daughters, as well as our sons, should attend agricultural schools and, if possible, colleges.

Condensed wisdom from the *Mirror and Farmer*: Get all the information possible this winter, so as to intelligently combat fruit pests next season.—Money is intended for enjoyment, and no better way of using it for such purpose can be suggested than to make the home more comfortable.—Farmers are rapidly learning that the best way to rest land is to keep it actively at work between sale crops, gathering fertility from the air by means of leguminous crops.—The farm is a home, and any expense incurred for improvement is just so much wealth saved and permanently invested.—There are very few farms where a close inspection just now would not disclose some unprofitable stock.

The humane treatment of the live-stock is a matter of first consideration for every farmer. Regard to the profit alone should lead to it, if nothing else does. The approach of Winter is an especially fitting time for remembering their needs, and for making them comfortable.—*Practical Farmer*.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Grading is being done around the power house.

Pres. Fairchild and Prof. Olin will lecture in a course arranged by the Cottonwood Falls High School.

Many industrious Third-years are working on their maps of the College grounds, and a few have finished the task.

The large electric generator which stood for several months in the iron shop has been moved into the steam plant, its future abiding place.

Jennie R. Smith, Fourth-year, was on the program of the Eighth District Christian Endeavor Convention at Manhattan, December 29th to 31st.

The team belonging to the Horticultural Department ran away Wednesday, breaking the wagon in several places. The horses escaped injury.

Col. J. W. Forsyth and Lieut. Nicholson of the 7th Cavalry were down from Fort Riley on Wednesday. The Colonel intends placing his son in College for the ensuing term.

Science Hall grows with surprising rapidity, and to one who misses seeing it for a week, the change is all the more astonishing. Another month of good weather will find the stone work completed.

W. E. Thackrey, Third-year, was married January 1st, at Lawrence, to Miss Bettie Olson. Mr. and Mrs. Thackrey are at home in Manhattan while the groom continues his studies.

Secy. Graham's oldest boy, Lloyd, is likely to remember New Year's day for some time. He added excitement to his celebration of the day by chopping the end of his forefinger off with a hatchet.

Many friends of Dr. D. C. Milner, though sorry to lose him from Kansas, will be glad to learn of his call to the pastorate of Armour Mission, Chicago, a church for the people in connection with Armour Institute.

Prof. and Mrs. D. S. Kelley of the State Normal School were the guests of Secy. and Mrs. Graham during the recent Christian Endeavor convention. Prof. Kelley is President of the State Christian Endeavor Union.

The little Shipman engine which for two years or more has furnished power for various uses in the Mechanical Department, has been moved into the power house, and will be used in future as a piece of experimental apparatus.

Prof. and Mrs. Mason were most agreeably surprised Monday evening by a party of forty friends who walked in without knocking and took possession of the house. Their excuse for intruding was the day—the tenth anniversary of Mr. and Mrs. Mason's marriage. The visitors left with their hosts many tokens of appreciation suitable to the occasion.

Mr. R. T. Morrison, of Dickinson County, visited the College on Thursday, looking through the various departments with great interest. He was surprised and delighted to find such a magnificent institution so near his own town, and thinks that hundreds more Kansas boys and girls would surely enter as students if they only knew what advantages and opportunities are here.

The College will be ably represented at the meeting of the State Board of Agriculture at Topeka, Wednesday to Friday next, by the following officers: Regent Wheeler, "Wheat-growing in Kansas;" President Fairchild, "Experiments for Farmers by Farmers;" Prof. Georgeson, "Lessons from the Danish Dairies;" Mrs. Kedzie, "The Farm Home;" Dr. Mayo, "Rabies, or Hydrophobia."

The Farm Department is under obligations to Mr. E. Hughes, of Manhattan, for the use of a Poland China boar. This boar was bred by Micasah Smith, of Rigdon, Indiana, and sent by him as a present to his uncle, Captain J. T. Smith, of Manhattan, who, after using for some time sold him to Mr. Hughes. He is recorded in the Ohio Poland China Record under the name of "Smith's Choice 30443." He is a good boar, well bred, is especially long in body, with heavy bone.

GRADUATES AND FORMER STUDENTS.

C. A. Kimball, '93, is reading law with Mr. Hessin in Manhattan.

G. K. Thompson, '93, is ill of diphtheria at his home in Irving.

A. Dickens, '93, is spending part of his vacation at the College. He reports a large school at Chalk Mound.

County Supt. Clothier ['92] has visited more schools during his term of office than any of his predecessors in the same length of time, having visited more than

two-thirds of the schools in the county, some of them two or three times, and expects to visit all of them once at least before his term expires in January, 1894.

—Alma News.

Mima Carey, Second-year in 1891-2, was married, January 1st, to S. D. Dyer, of Riley.

B. H. Pugh, '92, visits College friends this week, having just returned from a term's work at Harvard.

B. R. Elliott, '87, who has had several years experience as a ranchman in Colorado, is at home for a visit.

E. C. Parker, Second-year in 1889-90, was married on New Year's day to Mrs. Laura K. Patterson, of Manhattan.

Everett Higginbotham, Second-year in 1891-2, visited the College of Thursday. He is on the home farm near Myers Valley.

A son was born, December 21st, to G. J. Van Zile, '90, and Mary Van Zile Pierce, Second-year in 1890-91, at their home in Carthage, Illinois.

Graduates and former students of the College to the number of twenty gathered in the Senate Chamber at Topeka during the meeting of the Teachers' Association, and enjoyed a "love feast." Miss Houghton was chosen secretary, but did not take notes of the speeches made in the experience meeting that followed because of their number. Every body had something to say. President Fairchild addressed the meeting. Those present were, O. L. Utter, '88, Senior Class, Baker University, Baldwin; H. W. Jones, '88, Principal Schools, Alma; Bertha Helen Bacheller, '88, Assistant High School Principal, Lyons; W. H. Olin, '89, Superintendent Schools, Osborne; Mayme A. Houghton, '91, teacher in city schools, Manhattan; R. S. Reed, '92, teacher, Cedar Point; H. A. Darnell, teacher, Pavilion; R. A. McIlvaine, '92, Topeka; Geo. W. Smith, '93, teacher in city schools, Manhattan; C. H. Martin, Third-year in 1879-80, Principal Oakland Schools, Topeka; Geo. E. Rose, Third-year in 1879-80, Principal High School, Kansas City, Kan.; Mrs. Winnie Cotton-Olin, Second-year in 1887-8, house-wife, Osborne; Jennie M. Green, Third-year in 1890-1, teacher, Leocompton; Maggie Steuart, Second-year in 1891-2, teacher, Winchester; Hugh W. Mattoon, Second-year in 1891-2, Topeka; E. J. Gibson, Second-year in 1892-3, teacher, Topeka; Isabella R. Frisbie, Fourth-year, Mary E. Wilkin and J. C. Wilkin, Third-years.

A New Bulletin.

"The Effect of Fungicides Upon the Germination of Corn" is the title of Bulletin No. 41, from the Botanical Department. It has been found that treating the seed with chemicals is a remedy for many fungous diseases of plants. The increased use of this method of treatment necessitated experiments showing the effect produced upon the vitality of the seed treated. Corn was chosen, as it answers best to the conditions of the experiments. A definite number of seeds were soaked for a definite time in a solution of definite strength of the chemical to be tested and the percentage of germination noted. A check experiment was carried on at the same time, in which water was used in place of the chemical. Eighty-two chemicals were tested for various strengths and for various periods of time, making a total of about 400 experiments.

Some chemicals were found to affect the vitality of the seed much more than others. Among these were mercuric chloride, arsenous oxide, cadmium bromide, and potassium cyanide. Germination was entirely prevented by soaking for five hours in 1-5 per cent arsenous oxide; and for twenty-four hours in 1-10 per cent mercuric chloride, or for one hour in three per cent.

On the other hand, germination was scarcely affected by soaking for forty-eight hours in ten per cent solution of several substances, such as alum, saltpeter, and sodium sulphate.

The effect upon the vitality of the seed is shown first by the germination being retarded, and then by the per cent of germination being lowered, and finally by the entire prevention of germination. In general, the effect is proportional to the time and to the strength of the solution.

The fungicidal value of many of the chemicals used has not been tested, but the conclusion may be safely drawn that a chemical, to be of value as a fungicide, must not be used in a solution of such strength as to injure the vitality of the treated seed.

The Bulletin lists all the chemicals used in the experiment. It will be sent free to residents of the State on application.

The Weather for December.

Temperature.—The mean temperature for December, 1893, was 34.13°, which is 4.37° above normal. There have been but seven warmer Decembers in the past thirty-six years, the extremes being 41.68°, in '77, and 20.29°, in '76. The maximum temperature was 68°, on the 23rd; the minimum, 4°, on the 1st, 3rd, and 4th—a monthly range of 64°. The greatest range for one day was 40°, on the 14th and 16th; the least, 10°, on the 12th. The warmest day was the 21st, the mean being 56.50°; the coldest, the 3rd, the mean being 9.25°. The mean of the observations at 7 A. M., was 26.87°; at 2 P. M., 44.29°; at 9 P. M., 32.68°. The mean of the maximums was 47.26°; of the minimums, 21.10°, the mean of these two being 34.18°.

Barometer.—The mean pressure for the month was

28.943 inches, which is .08 inch above normal. The maximum was 29.488 inches, at 9 P. M. on the 12th; the minimum, 28.453 inches, at 7 A. M. on the 15th—a monthly range of 1.035 inches.

Cloudiness.—There were two days entirely cloudy, three two-thirds cloudy, two one-half cloudy, five one-third cloudy, four one-sixth cloudy, and fifteen clear. The per cent of cloudiness was 24, which is 20 below normal.

Precipitation.—The total precipitation for the month was .70 inch, which is .17 inch below normal. Five and one-half inches of snow fell on the 2nd, which remained on the ground for about one week. Light rains occurred on the 4th, 8th, and 24th.

Wind.—The wind was from the southwest thirty-one times, northwest thirteen times, south eleven times, west eight times, northeast and east six times, north five times, southeast three times, and a calm at the hours of observation ten times. The total run of wind was 7903 miles, giving a mean daily velocity, 254.93 miles, and a mean hourly velocity of 10.62 miles. The maximum daily velocity was 466 miles, on the 15th; the minimum, 65 miles, on the 5th. The maximum hourly velocity was 27 miles from 5 to 7 P. M. on the 24th.

Below will be found a comparison with the preceding Decembers:

December.	Number of rains.	Rain in inches.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858.....	3	1.11	.....	25.96	56	-16	.....	.....	.....
1859.....	1	.20	NW	20.90	62	-8	.....	.....	.....
1860.....	3	.50	NW	32.43	52	18	.....	.....	.....
1861.....	3	1.00	S	32.19	65	0	.....	.....	.....
1862.....	3	2.25	SW	39.50	65	14	.....	.....	.....
1863.....	4	2.17	NW	27.93	59	-13	.....	.....	.....
1864.....	4	1.11	NW	27.07	58	-6	.....	.....	.....
1865.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1866.....	4	2.02	N	28.90	57	4	.....	.....	.....
1867.....	2	.51	NW	35.44	62	15	.....	.....	.....
1868.....	3	.81	SW	24.86	57	-16	.....	.....	.....
1869.....	4	.16	NW	30.05	58	-3	28.83	29.20	28.45
1870.....	4	.45	SW	29.93	63	-11	.....	.....	.....
1871.....	1	.35	SW	24.17	53	-6	.....	.....	.....
1872.....	3	.95	S	21.02	60	-10	.....	.....	.....
1873.....	4	1.67	SW	28.71	65	5	28.74	29.26	28.29
1874.....	3	.67	SW	31.66	58	0	28.82	29.32	28.28
1875.....	2	.78	SW	38.22	72	4	28.70	29.11	28.20
1876.....	1	.50	SW	20.29	69	-11	28.97	29.50	28.43
1877.....	3	1.55	SW	41.68	67	13	28.81	29.20	28.30
1878.....	4	.91	SW	21.35	57	-7	28.89	29.33	28.27
1879.....	2	.62	NW	24.75	56	-10	28.60	29.12	27.97
1880.....	1	.28	SW	24.40	65	-16	28.69	29.21	27.92
1881.....	3	.53	SW	38.48	65	16	28.73	29.04	28.29
1882.....	3	.44	NW	29.59	67	-7	28.72	29.49	28.10
1883.....	2	.27	SW	33.04	66	2	28.70	29.14	27.98
1884.....	5	.33	NE	21.70	57	-7	28.58	28.95	28.10
1885.....	4	1.09	S	33.03	60	-4	29.10	29.41	28.56
1886.....	2	1.58	NE	24.34	62	-5	29.05	29.66	28.62
1887.....	3	.80	N	26.09	56	-9	29.07	29.88	28.43
1888.....	3	1.22	N	33.39	64	0	29.07	29.46	28.47
1889.....	1	.02	SW	41.50	75	0	28.90	29.40	28.11
1890.....	2	.18	SW	33.21	72	3	29.01	29.47	28.37
1891.....	5	1.09	SW	37.67	67	5	28.82	29.48	28.18
1892.....	7	1.75	SW	24.02	67	-9	28.95	29.39	28.45
1893.....	4	.70	SW	34.13	68	4	28.94	29.49	28.45
Means.....	3	.87	SW	29.76	62	-2	28.86	29.34	28.30

WIND RECORD.

December.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889.....	8047	259.55	576	21	10.81	43
1890.....	6414	206.90	323	82	8.62	32
1891.....	10032	323.55	632	65	13.48	48
1892.....	5426	175.03	449	77	7.29	27
1893.....	7903	254.93	466	65	10.62	27
Means.....	7564	243.99	489	68	10.16	35

E. R. NICHOLS, Observer.

FARMERS' MEETINGS.

The Oberlin Farmers' Institute.

The Farmers' Institute that was advertised to meet in Oberlin on December 14th and 15th was an interesting affair. The first meeting was held at the Court House, Thursday evening at 7:30. W. D. Street was chosen Temporary Chairman and H. W. Halladay Secretary. Professor Mayo, of Manhattan, was introduced, and spoke upon the wounds of animals. The Professor is rather young looking, with a smooth, boyish face, and was far from looking the ideal college professor; but from the moment he began to talk to the end of his lecture he held the audience completely, and the sound good sense and the valuable advice given was highly appreciated by every farmer present. Friday morning at 9 o'clock the Institute was again called to order, and F. F. Bliss, of Center Township, read a very interesting essay on raising swine. Mr. Bliss breeds Berkshires, and seems to be pleased with them. For grit he uses slaked coal. The best time to sell is at about 200 pounds, everything being favorable. Prof. Mason thought the last 100 pounds on a 300-pound hog cost considerable more than the first 100. LaLourette thought burned corn cobs made the best grit. H. Sayles, of Norcatour, gave his experience at length. He breeds Poland Chinas, and claims to have the best hogs in the State. He gave an interesting experiment of the effect of feeding wheat, and by his showing it seems that ground wheat is about the best food for a hog there is. Prof. Mayo then told how to examine a horse for soundness. His illustrations were excellent, his advice good, and his reminiscences of past experiences humorous.

After dinner, the Professor talked upon loco. The Professor's theory is that a locoed animal is simply starving to death. He has analyzed the plant, and is sure there is no poison or narcotic principle about it. He thinks there is nothing, however, that nourishes the system, and when an animal begins to eat, it begins to starve; this causes derangement of the brain from which it never recovers, even should it be taken to a place where it could get none of the plant. The theory is new and worth consideration. T. H. Fawcett, of Jennings, read an essay on irrigation that was excellent. He gave us some new ideas. We hoped to have it to make some extracts from, but Prof. Mason got it first for his College paper. Prof. Mason's talk on horticulture was highly entertaining. Friday evening Mrs. Kedzie lectured upon domestic economy. Mrs. Kedzie is a sociable, pleasant lady, and made numerous friends while here. Her address was full of thought and kind advice, accompanied by genuine desire to encourage and help the young. After Mrs. Kedzie closed, the Institute was permanently organized by electing W. D. Street President and H. W. Halladay Secretary. A committee of five was appointed to arrange a program for next year. Farmers that failed to hear these lectures missed a treat, and we hope another year to see a large gathering of the farmers of the county, and are sure all will be benefited by attending.—*Oberlin Herald*.

The Coming Institute at Hanover.

We are in receipt of a letter from Prof. J. D. Walters, of the State Agricultural College at Manhattan, in which, among other things, he states that the Faculty has designated Professors Charles C. Georgeson, Oscar E. Olin, and J. D. Walters to attend the Farmers' Institute to be held at Hanover on Thursday and Friday, the 18th and 19th of January. This will not only be something new, a Farmers' Institute in Hanover, but certainly of vital interest to every citizen, and especially to the farming community. Every farmer should take an interest in this meeting, and not only attend himself, but talk the matter up with his neighbor and urge him to attend also. Farming, stock raising, and the dairy business are yet in their infancy, especially in this western country, and much more rapid progress can be made by obtaining the best methods as well as more satisfactory results on the farm by coming in contact with others in the same vocation. Men learn by coming in contact with experience and observation; and the intelligent, energetic, business farmer is the one who meets with far greater success than the "slipshod" farmer who lets his farm run itself in the old "rut" of forty or fifty years ago. Mr. A. D. Campbell, who has been instrumental in working this institute up and securing a hall and speakers, should be aided and assisted in carrying it out to a successful result. The farmers and our business men should therefore lend a helping hand and take hold of the matter in earnest, and in that event it cannot fail of being a benefit to all, both town and country.—*Hanover Democrat*.

Farming for Pleasure and Profit.

I know of no farmer so happily situated as he who has both boys and girls to help carry on the farm. The principal item in the cost of all crops is labor and where the farmer and his family do the work the money received stays on the farm. No other business offers such a chance to enter into co-partnership, and work for and with those we love. With the father and mother as senior partners and general advisors, with one daughter book-keeper and general correspondent, another in charge of the poultry, and with each son in charge of some department of the farm, we have a firm that would be prosperous and happy. Take your children into the firm, interest them in your plans, and give them a share of the profits. For pleasure and profit, I would place next to the farm managed and worked by the farmer and his family the small farm of fifteen or twenty acres worked by the owner and one or two hired men. Such a farm if rightly managed will give the owner a good living and enable him to save from one to five dollars per day. With such a farm the owner will have time for rest and recreation, and will be better off in every way than the man of the same ability and capital invested in other kinds of business. I would never advise a young man to buy a large farm. I could name scores of men in New England that are today up to their ears in debt, who have worked fourteen hours per day year in and year out who would have been well off today if they had located upon small farms. Such men are generally cross and nervous; they are worn out looking after details. They are not happy and they cast a gloom about them, for happiness and its opposite are both contagious. You cannot expend all your strength in physical labor and then expect your brain to do just as good work. These men have been so tired day in and day out that they have not been able to think clearly. They have kept on spending the profit realized on the portions of these farms that they have worked in paying interest and taxes and in otherwise keeping up the unused portions.—*A Maine Farmer*.

Wheat has never been so largely used for stock feeding as during the present season. We think most of the farmers who have tried it have been well satisfied with the result. It is fortunate for stock-raisers that well-fed stock has not been such a drag in the market as has well grown wheat.—*Practical Farmer*.

Good stock is an educator. It presents an ever present object lesson of the value of breeding, selection, and cultivation. It makes the owner a better farmer than he could ever hope to be with only scrub animals about him.—*Practical Farmer*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Some miscreant has robbed a Lawrence teacher, Miss Pearl Laptad, of \$30 and a lot of other nice things.

The State Normal School has said that no more football shall be played by the young men who attend there. Will the faculty of the State Normal have the kindness to say how they will have their young men killed?—*Lawrence Journal*.

The Kansas State Normal oratorical contest took place last week. Miss Haltzschue of Sabetha won the essay prize, and Charles Courtney of Leavenworth the oratorical prize. Governor Lewelling was one of the judges, and presented the awards.

The annual session of the State Teachers' Association was well attended, the weather was unusually fine, the program complete, and the discussions interesting. The total enrollment for the session reached 508 paid members, but there were more than twice that number present.

It is not always best to draw comparisons, but yet it is something worthy of notice that while the High School has not a single tobacco user, in the Sixth A and Seventh B grades, two-thirds of the boys either smoke or chew. But what is still more worthy of notice is, that those who use the vile weed stand the lowest in their classes, and from present prospects not one of them will reach the High School.—*Newton Republican*.

Hon. Chas. F. Meserve, Superintendent of Haskell Institute, the United States Industrial Indian School, located in Lawrence, has tendered his resignation as the head of the school. It is given to take effect as soon as a successor is appointed by President Cleveland and qualifies. Mr. Meserve has accepted the position of President of Shaw University at Raleigh, North Carolina. This is one of the largest schools for the education of the colored youth there is in the south, and the recognition of Superintendent Meserve's merits as an educator has led to the call for his services down there. The scramble for the vacant position by hungry candidates of all kinds and shades has already commenced. Lawrence alone is reported to have half a dozen patriots who are willing to save the country.

The State Teachers' Association has elected the following officers for the coming year: President, Wm. M. Davidson, Topeka; Vice-President, Geo. W. Jones of Mound City; Secretary, Francis E. Katner, Troy; Treasurer, J. W. Spindler, Winfield; S. M. Cook, Chapman; H. M. Culver, Norton; and Wm. Stryker, Great Bend, examination committee. The flag committee awarded the flag to Morris County for sending 57 per cent of her teaching force to the Association. The flag was presented with appropriate ceremony by Mrs. Superintendent Bates, of Cloud County, to Superintendent Edgerton, of Morris County. The chairman of the auditing committee showed a balance from the last Treasurer of \$44.37. There was received from new members \$309; from old members, \$99.50; from the opera house lecture, \$156.25; making a total of \$609.12. The total expenditures were \$438.27, leaving a balance in the treasury of \$170.85.

The DeBoissier Orphan Asylum project, over which the Grand Lodge of Odd Fellows had such a heated discussion at the recent meeting in Topeka, has been taken into the courts; a petition being filed in the District Court of Shawnee County by Reno lodge of Hutchinson and ninety-nine other lodges of Kansas asking that the grand officers be enjoined from carrying out the project. The principal allegation is that the per capita tax of \$1.50 levied by the Grand Lodge is without the authority of the order's constitution, because it discriminates in favor of certain subordinate lodges that are exempted from the payment and penalty; because it is without authority and against the laws of the Sovereign Grand Lodge as well as this grand jurisdiction; because the purpose for which the tax is to be collected is not in accordance with the objects of the order; because the proposed action of the Grand Lodge to pay the indebtedness assumed by a private corporation wholly without the jurisdiction of the Grand Lodge is wholly without authority from the subordinate lodges and the constitution of the Grand Lodge of Kansas, and because the effect of the tax would be to deprive many of the subordinate lodges of their charter because of their inability to pay such tax, the Grand Master having threatened suspension and refused to allow installation of elective officers, or to communicate the annual traveling password if such tax is not paid. A temporary restraining order has been issued by Judge Hazen, and the hearing of the case set for February 14th.

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.
2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.
3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.
4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

MANHATTAN ADVERTISEMENTS.

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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

CORN-STALK DISEASE.

BY PROF. N. S. MAYO, D. V. S.

THERE is probably no one disease, with the possible exception of hog cholera, which causes greater loss among stockmen than that commonly known as corn-stalk disease of cattle. This disease occurs among cattle pastured in stalk-fields during the fall and winter months. The symptoms exhibited, and the peculiar and varied circumstances under which the disease occurs, have given rise to many theories as to its cause and nature.

Among the theories that are generally advanced as to the cause of the disease, is impaction of the third stomach, or "manifolds," with dry, indigestible corn-stalks; and the post-mortem examinations invariably show such a condition of things to exist. But there are many serious objections to this theory, among which may be mentioned that in many cases animals die in a comparatively short time, only a few hours after being turned into the stalk-fields—so short a time that it is difficult to explain how the stomach can become filled and sufficient inflammation set up to cause death. Preventive measures based upon this theory, such as turning animals into the stalk-fields for but a short time, an hour or so a day, and giving them plenty of other food, including salt and water, seems, in many cases, to reduce the losses to a minimum, and yet many instances can be cited where these directions have been carefully followed and severe losses resulted.

Another theory is that the disease is caused by animals eating the corn smut; yet experience and experiments show that smut has little, if anything, to do with it. Fields in which a large amount of smut was found have not produced the disease among cattle, and cattle in fields comparatively free from smut have suffered severely. The corn smut has been fed to cattle in quite large amounts, with no serious results, and a case is related where a farmer, believing smut to be the cause of the disease, took pains to gather the smutty corn and pile it by itself. His cattle broke in and ate what smutty corn they could, with no bad results.

Another theory, advanced a few years ago, was that the disease was produced by germs, or bacteria, that grow naturally upon the corn, and which causes the corn stalks and leaves to turn a reddish-brown in spots; that these germs, when eaten by cattle, produced the corn-stalk disease. There are also many and serious objections to this theory. It is a recognized fact that cattle do not suffer from the corn-stalk disease when fed upon corn-fodder, and the germs must be in the corn-fodder just as certainly as in the stalks that remain standing in the field, and the germs ought to be more active in stalks that have been cut before fully ripe and not subjected to the "weathering" action of the wind and rains in the field.

Two years ago an experiment was carried on here in which a large quantity of growing corn was inoculated with the corn-stalk disease, pains being taken that every stalk should have the disease. This corn, when thoroughly ripened, was fed to a two-year-old heifer which ate the stalks clean and seemed to enjoy them, there being no unusual results whatever. A field of about twenty acres of corn near the College was affected very badly and twenty-eight head of cattle were pastured in the stalks during the fall and winter and showed no symptoms whatever of the disease.

There are a good many things to be studied in connection with this disease. Extensive and careful observation seems to show that outbreaks of corn-stalk disease are liable to follow cold rain storms, and that it is most likely to occur following seasons when there has been a large growth of corn stalks followed by storms and winds, especially in the early fall; but the disease also occurs under nearly opposite conditions, and under such varied conditions that it is impossible to mention them.

For the past three years an effort has been made to carefully study the disease with especial reference to its cause and prevention, that a bulletin of the Experiment Station might be issued upon it, but very little progress has been made owing to the difficulty of finding outbreaks. While there have been many outbreaks and some losses, no notice has been received in time to investigate the disease. Notices of outbreaks, and communications from those who have suffered losses from the disease with reference to the conditions under which it occurred, are requested. If a notice is received in time, and it is possible, I should be glad to avail myself of any opportunity to study the disease that more information regarding its nature, cause, and prevention may be gathered.

ALFALFA.

BY SECY. I. D. GRAHAM.

THE alfalfa plant, whose origin is said to antedate history, and whose value in the economy of the farm is not yet fully appreciated, belongs to the clovers, and, unlike the most of them, seems peculiarly adapted to the agriculture of the great plains.

Like other prominent members of the great clover family, alfalfa is an enricher of the soil, a heavy yielder when grown under favorable conditions, a drouth-resister of very considerable capacity, and a most valuable food plant for live-stock. It has long been a favorite plant for growing in the irrigation districts of California and Colorado, and, more recently, it is reported a success on the uplands of Western Kansas.

From one experiment of this kind the writer desires to recite some facts. The land upon which the experiment was made was situated in one of the western counties of Kansas. It was upland and more or less sandy. The subsoil was porous and also sandy. The land was plowed in the usual manner, and the seed sown about the first of May. No special care was used in the preparation of the soil, and it was noted that the ground was mellow, even late in the season. Owing to necessity, a portion of the land was fenced off and used, after seeding, for a short time, to confine a bunch of cattle. In the fall it was noted, much to the surprise of the owner, that the land that had been trampled by the cattle had much the best stand of alfalfa.

Acting on the hint that, for his kind of soil, the land should have been rolled after seeding, he trebled his acreage next spring and rolled the land. The seeding of the latter field was done on fall-plowed wheat land. The results were satisfactory as to stand, but he here met a new difficulty. All the gophers in the country seemed at once to congregate upon this particular portion of the farm. Killing these off by various methods, his crop was in such condition that he pastured it lightly the first season. He now considers this alfalfa field the most valuable portion of his farm. Even during the past dry season he was able to save a seed crop which he thought a fair return for his investment.

Alfalfa is not the whole solution to the agricultural problem of the plains, but it will undoubtedly lead a long way towards it and find a most useful place therein.

MIDDLE GROUND IN TECHNICAL COURSES OF STUDY.

BY PROF. O. P. HOOD.

CRITICISM of a course of study should be only along the lines of its avowed objects.

There seems to be nearly as many varieties of courses as there are colleges established under the land grant act for the "practical education of the industrial classes in the several pursuits and professions of life."

There is, however, to be found in many if not most of these colleges two separate courses, the one educating toward those agricultural pursuits grouped under the general head of agriculture, and the other educating towards mechanical pursuits in general. These courses, while supplying to a certain degree a general training, attempt also a special training at the same time in either technical agriculture or technical mechanics, which specialization warrants the name of a "technical course."

The middle ground which this College seeks to occupy is shown both in the avowed objects and in the plan of the course.

The accompanying table is presented to show the disagreement and resemblances between those strictly agricultural courses, and those technical mechanical courses found in representative colleges, and also to show the middle ground occupied by our own course.

In this course, it is believed the foundation for future special training should be well laid, and that a more special course in any direction is not warranted by the previous preparation of the students applying to this College from the common schools of our State.

The table presents three courses each in special agriculture and mechanical engineering, and it is believed they are fairly representative of such courses. Between similar courses there seems to be no start-

ling divergence, but between the two classes of courses much important difference is seen. The figures in the table, while representing no absolute value except in the case of laboratory and industrial work, are, it is believed, the maximum number of hours that would be required at any college.

	AGRICULTURAL COURSES.			Kansas Agricultural College.	MECHANICAL COURSES.		
	Purdue University.	Iowa Agricultural College.	Michigan Agricultural College.		Iowa Agricultural College.	Purdue University.	Rose Polytechnic Institute.
Mathematics	870	995	845	1015	1329	1356	1728
Humanities	1368	1252	1204	1713	1054	909	1471
Mental Science	228	.....	207	31	.....	.....	.....
Physical Science	820	91	1157	1241	2221	2573	2783
Natural Science	3059	3189	2850	1217	.....	.....	.....
Drawing	111	75	120	363	784	522	1080
Military	152	132	428	96	132	152	.....
Industrial	45	.....	1350	706	836	380	1540
Weeks in four year's Course	149	132	136	144	132	149	144

The graphical representation of these various amounts as shown below may help in the comparison:

MATHEMATICS.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

HUMANITIES.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

MENTAL SCIENCE.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

PHYSICAL SCIENCE.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

NATURAL SCIENCE.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

DRAWING.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

MILITARY.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

INDUSTRIAL.

Agricultural Courses—

Purdue: _____

Iowa: _____

Michigan: _____

Kansas: _____

Mechanical Courses—

Iowa: _____

Purdue: _____

Rose: _____

The figures were obtained by assuming that for every study requiring one hour of class recitation, two hours of previous preparation were necessary. This is not entirely an assumption, since as much time is expected in some courses, and is mentioned in the cat-

alogues of some institutions. The method has been thought fair by others in making similar comparisons. The figures therefore represent the relative number of hours devoted to the several lines of study throughout the course of four years.

Under the head of the Humanities are grouped such as the Languages, History, Political Economy, Rhetoricals, etc.

Under the general head of Physical Sciences are grouped those subjects which treat of the general properties of inorganic bodies, while natural science is restricted to such as the biological studies.

Included in each division of science is a line of "technics" which seek to apply the science to the several arts, such as "dairying," "feeds and feeding," "seeds and grasses," etc., under natural sciences and "mechanics of engineering," "materials of construction," "steam engines," etc., in physical science.

Comparing our own course with the strictly technical courses, it is evident that the former is in no danger of becoming technical in the directing of mechanics by moderate changes in any single line of study, and compared with other agricultural courses an adequate foundation is laid for specializing along the line of natural sciences most valuable in the life and business of farming.

Good Work of the Fancy Farmer.

Probably no other class of people in an agricultural community has ever been so severely ridiculed as those who are known as "fancy farmers." It is true that such men have made a good many mistakes. Of these, some were very laughable, and others, though less ridiculous, showed a remarkable ignorance concerning the proper methods of farm management. But it is equally true that these fancy farmers have, in many cases, been of great help to the more practical agriculturists among whom they came to live. There are various ways in which the fancy farmers have done much to promote the cause of progressive and profitable agriculture. These men have been enterprising and energetic, and have not only had the means for trying costly experiments, but have been willing to risk considerable sums of money in putting their theories into practice. They have been like the pioneers who, at great cost to themselves, open in a new country the path of prosperity to all who choose to follow. They have been teachers who have given excellent instruction without expense to those who have profited thereby. Their successes have shown farmers how rich returns can be obtained, and their failures have warned others to avoid courses which can lead only to losses and disappointments.

It is hardly necessary to specify the various ways in which fancy farmers have benefited their neighbors. The introduction of improved breeds of animals, of better kinds of grains and vegetables, of cheaper and yet more efficient methods of cultivating farm crops, and various other useful changes which might be named, have been greatly facilitated by the efforts of these men who farmed for pleasure more than they did to increase their incomes. But there is one way in which their example and influence have been very helpful, which deserves especial mention. This is in the improvement of the buildings and yards, and the beautifying of the home surroundings. Though not of as direct pecuniary advantage as some other things which they have done, this part of their work has been of great benefit to individual farmers and to farm communities at large. It has led to improvements, the value of which cannot be indicated in financial terms, but which have been both great and permanent. For this, even more than for the object lessons which have shown how more money can be made from the land, fancy farmers deserve the thanks and good will of all who till the soil.—*John E. Read, in Agricultural Epitome.*

Roads Without Stones.

The advantage of properly built and well maintained dirt roads seems to have been largely overlooked in the movement for the improvement of our country roads, and it has been said, with some reason, that the movement in favor of good roads has been hampered to some extent by a somewhat too enthusiastic advocacy of broken stone roads, either macadam or telford. The cost of such stone roads is absolutely prohibitive of their adoption in many parts of the country where, however, improved roads are urgently needed. Comparatively little is said about dirt roads in the discussion on improved construction, but it is certain that very excellent roads may be made of earth by a proper system of construction. Both surface drainage and sub-drainage are essential in obtaining a durable road, and intelligent maintenance is another essential, which latter is rather difficult to insure. The mere dumping of piles of earth in wet spots or low places is not maintenance, but is a waste of energy due to carelessness or misdirected zeal. With a good dirt road once completed, it would probably be found economical and advantageous to intrust its maintenance to a few skilled and intelligent men paid for their services, instead of leaving the maintenance to the spasmodic attention of the farmers and their hired men.—*Colman's Rural World.*

FARM NOTES FROM VARIOUS SOURCES.

In all the history and theory of breeding, nothing seems so much required to be told over and over again as the fact that to breed for a quality it is necessary to breed from other animals that have that quality.

Prof. Hazen, of the Weather Bureau, expresses the opinion that all the concussion experiments to produce rain have been failures, and that those conducted in Connecticut last summer seemed to prolong the drouth in that section, while there was plenty of rain in all the region roundabout.

A man who wishes to have his cattle quiet and easily handled must himself be quiet when about them. An excitable, nervous, ill-tempered man should never be permitted to have the care of stock. It is well to bear in mind that good breeding in the man is just as valuable as it is in the animal of which he is master.—*Farmer's Home.*

Waste places can be advantageously used for trees. When a farmer has too much land and does not care to sell, he should not allow it to grow up in any sort of wood that may take possession, but plow the land and put out young forest trees in rows, and cultivate them for a year or two. Black walnut and other valuable trees may be grown. It is the process that more than pays the interest on the land, and the field may be used for a cattle pasture a portion of the time.

There is much to be said in favor of a wider development of horticulture among our farmers. The progress and development of a given region can be closely estimated by watching the progress of its horticulture. The happiness and stability and best interests of a community are advanced by the liberal practice of this industry. Fruits and flowers are great civilizers, and we cannot have too many of them.—*Farmer's Home.*

Talking of times and practices of the days before the war, a correspondent remarks: "In those days it was not considered necessary for a farmer to be educated in order to be successful. The bright, active members of the family were educated for some profession, and the dull ones kept at home to help run the farm and take care of the parents in their old age. But this state of things has changed, as it has been satisfactorily proved that farming is as much a profession as any, and requires just as bright, active, and well-educated men to engage in it successfully as any of the so-called liberal professions."

Celery should have a place in every garden, not only because it is a delicious table vegetable, but because it stands very high as a nerve food, and when eaten in large quantities by those suffering from nervous exhaustion it proves an invaluable remedial agent. Many nerve tonics are made from it, some of which are quite costly, but none of them serve the purpose so well as the raw vegetable itself. It need not be reserved for table use only, but a stalk should be eaten whenever convenient through the day, morning being the time when the greatest benefit is experienced from the use of it.—*Farmer's Home.*

An enormous quantity of corn fodder is grown each year, but not one-third of its feeding value is procured. Hundreds of thousands of acres of stalks are allowed to stand in the fields until December or January when the grain is husked, and then the cattle are turned into the field to get what they can. Usually they find only blades whipped off by the wind and blown away, and the stalks and upper part—the best portion—ruined, and even the husks weather beaten so as to be of little value. Such feed as remains is of poor quality. The greater part of it is rotting on the ground. There is hardly a better or cheaper stock feed than corn fodder, yet most farmers treat it as though it had little or no value.—*Farmer's Home.*

The man who has all his life been keeping scrub stock, and flatters himself that such care as is usually given to that class of property will be sufficient in the case of high-bred animals may rest assured that he is all wrong; not that all the cultivated breeds need pampering, as many erroneously suppose—they simply need the care scrub stock should, but do not, have. The point which we wish to make is that if a man is in the habit of neglecting a common beast, to his own injury and the animal's discomfort, he is not the man to keep animals which will, if kept well, show great gain and good profit, while, on the other hand they will show rapid depreciation under neglect.—*Farmers' Home.*

Most, if not all, of the tricks and vices of horses are either caused or aggravated by bad handling at some period in the lives of the animals which have them. Probably the greater part of the mischief is done when the animal was young, though old horses have been spoiled by carelessness or by injudicious action on the part of their drivers or keepers. The trick of pulling back when tied is almost always learned through some neglect or want of care on the part of the persons having charge of the horse. The colt that is tied with a small or weak rope may, if a little frightened, break away from its fastening. When it has once learned this way of getting loose, it is not particular about the time or place in which to show its knowledge and skill. A stronger rope may be put on, but the chances are that it will go the same way the weaker ones went. The horse gives stronger pulls as the strength of the rope is increased, and when a large rope is used he is liable to do himself serious injury. Care should be taken not to scare a horse so that he will give a strong pull upon his halter or bridle, but from the first time he is tied as a colt until the last time he is tied as an old horse the hitch should be so strong that if he does pull he will not break away. Prevention of a bad habit is cheaper and better than attempts to overcome it after it has once been formed.—*American Dairyman.*

THE INDUSTRIALIST.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Prof. Jones spent the vacation in Ohio.

The roof is being put on the west wing of Science Hall.

The Board of Regents will meet on Tuesday, January 23rd.

Mrs. Kedzie rested for a week during vacation at the Frowe farm, near Louisville.

Monday Faculty dinners and Friday lunches begin next week and continue throughout the term.

Mary Lyman, Fourth-year, spent the vacation visiting with Kate Pierce, her class-mate last year, at Winfield, Iowa.

Mr. A. A. Stewart has sold his paper, the *Republic*, to a stock company of Clay Center, with Mr. John B. Park at its head.

F. D. Coburn, Secretary of the Board of Agriculture, and Judge Sutton of Russell will give lectures in the Short Course of February next.

Make your preparations now to attend the Short Course of Lectures for farmers, beginning February 6th and continuing to and including February 17th.

The Winter Term opens with an enrollment of 461, distributed by classes as follows: Fourth-year, 42; Third-year, 75; Second-year, 119; First-year, 175; Preparatory, 50.

I. A. Robertson, Third-year, and T. M. Robertson, Second-year, were kept from classes three days this week by the sickness and death of their ten-year-old sister, Bertha.

The Swiss Commissioner to the World's Fair has asked for cuts of the College shops and printing office to use in his official report to the Consul General of Switzerland.

Many names are sent with inquiry for further particulars as to the Farmers' Course of Lectures to be given February 6th to 17th. Multitudes express the wish to attend if opportunity and time permit.

Farmers in the vicinity of Manhattan can if they will profit by the Short Course in Agriculture at no expense to themselves beyond the actual time required to attend. Every one of them should take the course.

Chaplain Lovell, of Fort Riley, called at the College yesterday forenoon in company with Mr. Waring, of Manhattan, and in a hasty visit found much to surprise him in the extent of the institution and its work.

F. J. Smith, Third-year, next week takes charge of the advertising department of the *Manhattan Republic*. His work for nearly two years past in the Printing Department of this College has proved satisfactory in every way, and he will do full justice to his new duties.

The Alpha Beta Society yesterday elected the following officers for the winter term: President, Jennie R. Smith; Vice President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps.

Prof. Willard is the author of a text-book for the classes in organic chemistry, entitled "An Introduction to the Organic Compounds of Every-Day Life." As the author states, the book is a compilation designed to meet his special needs, and its object is to present that knowledge of organic compounds which is necessary to the most successful pursuit of agriculture, mechanic arts, and domestic economy. The book contains 200 pages, and is neatly bound in cloth.

In electing Mr. F. D. Coburn Secretary of the State Board of Agriculture, that body chose wisely. Mr. Coburn has long been identified with the agricultural interests of Kansas and the West, and is an acknowledged authority in his specialty, stock-breeding, being the author of an excellent treatise on the subject. He is familiar with the work of the office, having served there about ten years ago both as Secretary and Assistant Secretary. As editor of the *Live-Stock Indicator*, Mr. Coburn made for himself a reputation as an agricultural writer of a high order, and succeeded in a short time in transforming the paper from a mere price-current into a farm journal of genuine worth. His term of service as Regent of this College made every one connected with the institution his friend while he in turn never misses an opportunity to say and do good things for the College and the cause it seeks to promote.

The meeting of the State Board of Agriculture at Topeka, last week, was a most interesting and profitable session. The College was represented by Regent Wheeler in a paper entitled "Wheat-growing in Kansas;" Pres. Fairchild, "Experiments for Farmers by Farmers;" Prof. Georgeson, "Lessons from the Danish Dairies;" Prof. Mayo, "Rabies, or Hydrophobia;" Mrs. Kedzie, "The Farm Home." Prof. Georgeson and Secretary Graham also read papers

before the meeting of the Stock-Breeders' Association.

Prof. Mason, in the first Friday afternoon lecture of the term, treated of "Maple Sugar and Sugar Maples," telling his hearers, among many other interesting facts connected with the manufacture of maple sugar and maple syrup, that the true sugar maple tree (*Acer Saccharinus*) is almost as scarce as the genuine article in sugar and syrup. The sugar maple occurs from Maine to Florida, and as far west as the Missouri Valley bordering on Kansas. Few trees are found in this State, and they only in the extreme eastern portion.

Much interest was aroused at the meeting of the State Board of Agriculture this week in the subject of irrigation in Western Kansas. A strong delegation from that portion of the State presented the need of special experiments upon irrigated lands there, and the following resolution was adopted:—

WHEREAS: there is at the disposal of the Board of Regents of the State Agricultural College the sum of \$15,000 annually appropriated by the General Government for experiments in agriculture; therefore, be it

Resolved: That we hereby request the said Board to undertake as soon as possible practical experiments in agriculture by irrigation in the western third or belt of the State, and in the execution spend a sufficient sum to make the experiment thorough.

The matter will be fully considered at the next meeting of the Board of Regents, and no doubt some practical method may be devised for securing the ends sought.

GRADUATES AND FORMER STUDENTS.

W. E. Whaley, '86, Superintendent of Salina Schools, visited his alma mater during vacation.

Jennie Selby, Second-year in 1892-3, spent her vacation at home. She is teaching at Lexington, Neb.

Lou Hessin, Second-year in 1889-90, has returned to her studies at Monticello Seminary, Godfrey, Ill.

A daughter was born, on New Year's Day, to R. U. Waldraven, '89, and Maggie, Campbell-Waldraven, Second-year in 1890-91, at Kickapoo, Kansas.

B. H. Pugh, '92, and Mollie E. Grout, student last term, were married yesterday (January 12th) at Kingfisher, Oklahoma. The young couple will live for a year in Texas or New Mexico.

Scientific Club.

December 12, 1893.

The Club was called to order by President Willard. The minutes of last meeting, May 26th, read and approved. There being no regular paper, the Club passed to the head of voluntary reports.

Prof. Hitchcock gave a report on figures of one edge and one surface.

Mr. Harling reported on the finding of crayfish at considerable distance from the river or any possible overflow.

Assistant Burtis reported the finding of various articles in the stomachs of animals.

Prof. Hitchcock reported on the curve of frequency in the diametrical measurements of some castor bean seeds, mustard seeds, corn smut spores, and velvet weed seeds.

Prof. Willard reported on the origin of the atmospheric effect of carbon dioxide on germination of seeds, and the effect of a small per cent of salt on the sweetness of sugar.

The following officers were elected for the coming year: President, E. R. Nichols; Vice-president, A. S. Hitchcock; Secretary, Grace Clark; Treasurer, F. C. Burtis; Programme Committee, E. R. Nichols, J. T. Willard, M. A. Carleton.

Adjournment. E. R. NICHOLS, Secy. pro tem.

Course of Lectures to Farmers.

The Kansas State Agricultural College invites attention to a short course of lectures on practical topics pertaining to agriculture, horticulture, stock raising, dairy, veterinary science, farm architecture, farm accounts, etc., which will be given free to all persons interested. The course will commence on Tuesday, February 6th, at 10:30 o'clock A. M. and continue daily, including Saturday forenoon, February 10th, until Saturday noon, February 17th. It is intended to give three lectures per day: at 10:30 A. M., 1:30 P. M., and at 3 P. M. Each lecture will be followed by a general discussion of the facts presented, in which all are expected to participate. During the course, several evening lectures will be given in continuation of the series of lectures on economic subjects. A program giving the necessary details will be issued before the opening of the course.

The following is a list of the subjects to be presented by members of the Faculty:—

The Family as a Factor in Farming.....	Pres. Fairchild
Speculation in Farming.....	Pres. Fairchild
Geology of Soils.....	Prof. Fairley
Nitrogen in Agriculture.....	Prof. Fairley
The Impurities in Water.....	Prof. Fairley
Principles of Economic Entomology.....	Prof. Popenoe
Farm Insects.....	Prof. Popenoe
Insects of Orchard and Garden.....	Prof. Popenoe
Birds and the Farmer.....	Prof. Lantz
Home Grounds and Farm Buildings.....	Prof. Walters
Farm Accounts.....	Secy. Graham
Preservation and Preparation of Foods.....	Mrs. Kedzie
Motors for the Farm.....	Prof. Hood
History and Description of Prominent Breeds of Cattle.....	Prof. Georgeson
Maintaining the Fertility of the Farm.....	Prof. Georgeson
Stockbreeding—Laws of Heredity.....	Prof. Georgeson
Stock-feeding.....	Prof. Georgeson
Lightning Conductors.....	Prof. Nichols
Lameness.....	Dr. Mayo
Veterinary Obstetrics.....	Dr. Mayo
Colic in Horses.....	Dr. Mayo
Fermentation and some of its Relations to Agriculture.....	Prof. Willard
Wheat Rust.....	Prof. Hitchcock
Treatment of Plant Diseases.....	Prof. Hitchcock
How Plants Live.....	Prof. Hitchcock

Cultivation of Orchard Fruits..... Prof. Mason
The Farm Garden..... Prof. Mason

Lectures on special topics by practical farmers and specialists will be presented. The following have been promised:—

The Irrigation Question..... E. B. Cowgill
The Dairy Interest..... J. E. Nissley
Horse-breeding as a Component of General Farming..... F. H. Avery ['87]

The speakers and subjects in the course on economics cannot be announced at present.

A Few Words to the Boys.

Now that farming, through the medium of the agricultural experiment stations, has properly become recognized as a veritable science, farmer boys should be proud of their calling. The fact that agriculture holds the key to the entire business of the entire world is another fact farmer boys should be proud to be identified with. Waldo F. Brown, in the *Stockman and Farmer*, has the following:—

"I have rarely written to any particular class in the many years that I have contributed to your paper, but I wish in this to talk of and to the farm boys who are still on the farm, but perhaps debating whether to stay there or not. I recognize the fact that not all the boys can stay on the farm, and that many are needed in the various walks of life, and will be useful and happy in their chosen callings. On the other hand, I know many farmers' boys are dissatisfied because they think they must work harder on the farm than in most other callings, and receive for the work less pay, and that their chances for financial success will be greatly improved by changing from farm to city life. One thing which has contributed to their discontent is the fact that for several years past the profits of farming have been affected by exceptionally low prices of some of the leading products, and drought and flood have greatly injured the crops. Yet during all these years there have been some paying products, and many farmers who have managed so intelligently and cultivated so thoroughly that they have made a good profit. I believe that, taking the last ten years, which are certainly more unfavorable than any other consecutive ten during the last forty, a larger per cent of the farmers have lived comfortably and saved money than of men engaged in any other industrial calling.

"One other thought troubles many of the boys on the farm. They see many farmers whose lives seem to have in them little worth living for. They plod along in a dull routine of work, and are uncouth in speech and dress, and seem to have either never had any ambition to improve their condition in life, or to have lost it, if they had, and I do not blame any young man from shrinking from such a fate. Now, I would not advise a boy whose tastes are so decidedly in favor of some other employment that he cannot be happy and contented on the farm to stay there. But I would ask every young man to look all the facts in the face, and weigh the matter well before coming to a decision.

"I have under my notice the farmer boys of my locality, and know how they have succeeded, and perhaps can give some light on the question of hard work and chances for profit. Three years ago two of them on neighboring farms started in business for themselves, one going to the city and the other taking his father's farm on shares. Both were boys of good habits and principles, with energy and pluck, and a determination to succeed. The boy who stayed on the farm has saved several hundred dollars, and will in a few years have enough capital to start in business for himself, either on a rented farm or to buy a small farm, with a fair prospect of becoming its owner and out of debt by the time he reaches middle life. The other young man was successful in at once procuring a situation with a firm of good men, and has remained with them till the present and expects to for years to come. He began at \$4 a week and increased to \$5 before the year was out, but his board and room cost \$5 a week, and washing, clothing, and other necessary expenses cost \$1.20 more than his salary. The second year his pay was advanced to \$7 per week, but he did not quite make expenses, and the third year he made \$8 per week and spent it all.

"To be sure there is an occasional young man who gets promoted more rapidly and begins to save money sooner than this one, yet I think he has had fully average success, and possibly more. The fact is, there are more applicants than positions in the commercial world, and this very fact keeps wages down. As to which one works the harder, I presume the farmer boy has some days of harder work than the boy in the store, but there is a great variety in the work of the farm, and rainy days and winter there is but little to do and no night work. The boys in the store work from 6 o'clock in the morning until 8 o'clock at night, and in a grocery store on Saturday night till 9 o'clock or later. The farmer boy can always have two hours a day to read if he wishes it; the boy in the store does not get two hours a week for reading, unless he takes it from time when he ought to sleep.

"Again, the boy on the farm is quite certain to form habits of economy which will be a help to him through life, while the boy in the city has great temptations to spend, and often yields to them. The boy who settles down on the farm is always sure of work at good wages. The supply of good farm hands does not equal the demand, while the reverse is true of nearly all classes of workmen in the cities. There is no tyrannical labor union to interfere with the farmer's right to work, and no matter how hard the times may be, he has an abundance to eat and a home to live in. He has no chance to become a millionaire, it is true, but a much better chance to own a home and one that will support him at that, than the clerk in the city. Three or four thousand dollars invested in

a small farm which the owner has learned to manage wisely means a good living and security for old age, while the same amount invested in a residence in the city means that you must live in an undesirable neighborhood, and you will pay heavy taxes and get nothing from it toward the support of a family except a place to live in.

"The farmer who studies his business and understands the forces at his command cannot fail to be an intelligent man, so that no young man need fear the calling will degrade him. Forty years ago I attained my majority, and at that time was debating the question of what my life-work should be. I met with fair success as teacher, and was disposed to make that my profession, but I decided in favor of the farm, and have never regretted it, and I believe that I have better health, have had less care and worry, and probably as much money and influence as I could have hoped for as a teacher."

Diversified Farming.

Prosperity and progress in this country is diversity of labor, and all are entitled to a fair compensation. The farmer holds a very responsible position, for he must feed the world; he is blessed, however, by holding the most independent position of mankind. Take this great city with 1,500,000 people; take 500,000 out; how does the other 1,000,000 live compared with the farmer? Any intelligent man would rather have thirty acres of land in the country than to be the best mechanic in Chicago who gets \$4 per day. You may ask how would a man live on 30 acres of land? Two acres for barn, house, and garden; 28 acres to cultivate; raise 14 acres of corn, 7 acres of clover, two acres of rye, three acres of oats, two acres of drilled corn. Keep 7 cows by soiling them; raise to sell 50 hogs, sows bred to come in February; a warm place to keep the pigs; put a movable fence around his clover field, say four acres, to pasture his hogs in summer time, three acres of clover to mow to soil his cows; plant his corn in a furrow, one spear in a place; cultivate on a flat surface; he would raise 100 bushels per acre. This manner of farming returns all back to the soil and would increase its fertility. The gross sales would be: Fifty hogs, \$500; butter, \$300; garden, \$100; all his expenses should not exceed \$400, leaving the net \$500. Set trees around the outside of his farm, apples, cherries and other fruits natural to the soil; this would beautify his home; he would be a king in independence compared with a mechanic. This is the system we have adopted in Illinois: Divide the farm into five equal fields, 1, 2, 3, 4, and 5. First year No. 1, corn; 2, corn; 3, grass; 4, grass; 5, wheat and oats. Second year, No. 1, wheat; 2, corn; 3, corn; 4, grass; 5, grass. Continue in this rotation.—*Samuel W. Allerton, before Agricultural Congress.*

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

KANSAS EDUCATIONAL NOTES.

PROF. T. D. WALTERS.

The regular quarterly teachers examination will be held January 27th.

The Riley County teachers will meet at Manhattan next month. State Supt. Gaines has promised to be present and deliver a lecture.

The chinch bug report for 1893 by the Department of Natural History of the University will be ready for the State Printer next week.

The school attendance at Wellington has decreased to such an extent that the Board of Education has dispensed with three teachers.

The humane societies should investigate the football game. It is one of the roughest games ever introduced to the American people.—*High School Clarion.*

The colored people of Lawrence have four literary clubs—the Lawrence Progressive League, eight years old; the Sierra Leone, two years old; the Eureka, three years old; and the Beau Ideal, one year old.

No one will again question the Methodism of President Quayle of Baker University. He has sent out a letter to each of the alumni of that institution, asking for a donation of \$100 toward clearing up a long-standing indebtedness.—*Topeka Capital.*

The Literary League of Abilene will study the history of middle ages and French literature. The eclectic course is devoted to popular subjects of interest. At a recent meeting the Congress of Religions and the various creeds there represented were discussed.

Prof. S. E. Robertson, of Baker University, has resigned, and Prof. W. N. Simpson, of Lincoln, Neb., has been appointed to take his place. Prof. Robertson has been connected with Baker since 1888. He intends to devote himself to his various business interests in Osage County.

The Saturday Club of Hiawatha is studying Dr. Smith's History of Greece. Miss Lizzie Herbert has charge of current events. Miss Herbert is a sister of Ewing Herbert of the *World*, and is an exceedingly entertaining writer. It is safe to say that under her direction only the most interesting current events will be discussed by this club of bright women.

The eighteenth annual meeting of the Kansas State Historical Society will be held in the hall of the House of Representatives at Topeka on Tuesday evening, January 16th, for the election of one-third of the members of the Board of Directors, and the transaction of such other business as may come before the meeting. Addresses will be delivered by the President of the Society, Hon. P. G. Lowe, also by Prof. E. B. Cowgill, Hon. T. D. Thacher, and others. A meeting of the Board of Directors will be held at 2 o'clock P. M. of the same day in the east rooms of the Society. All members of the Board are requested to be present.

The State Historical Society is now receiving the regular issues of 765 Kansas newspapers and periodicals—namely: 39 dailies, 668 weeklies, 1 tri-weekly, 1 semi-weekly, 44 monthlies, 5 semi-monthlies, and 7 quarterlies. Since the first of January last, the aggregate number of Kansas newspapers has fallen off from 792 to 765—27 in eleven months. The Society is still diligently pursuing its work saving newspapers of every county and town in the State where a newspaper is published. They still come in from all the 106 counties, even disorganized Garfield county still having one newspaper. The library of the Kansas Historical Society contains more newspaper files than any library in the country, and is still gathering more than any other library in the world. There is no department of the library which is so much consulted as the newspaper department, and none which is regarded by the intelligent people of the State with so much interest. The Executive Council is just now having made for the use of the Society, out of the lumber which formed the partition wall of the broad corridor in which the Dunsmore house held its deliberations, an additional room in that corridor which will contain, when complete, 5,000 volumes of newspaper files. This will bring the now separate contents of this department into convenient access in one portion of the State House. The library of the Society now contains upwards of 13,000 volumes of newspapers and periodicals, of which nearly 10,000 are of Kansas.

Among the resolutions adopted by the State Teachers' Association, is one pertaining to the establishment of County High Schools. It reads as follows: "That every county having a population of 6,000 or over as shown by the last federal or state census, and a valuation of \$1,500,000 or more, shall establish a County High School at such place in said county as may be determined by the popular vote, and whenever, in any county having the required population but not the required assessed valuation, one-third of the electors of the county as shown by the last preceding election shall petition the board of County Commissioners, praying for the establishment of a County High School, the County Commissioners shall at once proceed to establish such High School. In connection with this, we demand a uniform system of common school graduation, including a uniform course of study for district schools and for county high schools prepared by the State Board of Education, and providing that all pupils who complete the district school course and receive a diploma, shall be admitted to the County High School, and all who complete the County High School course shall be admitted to the University, the State Normal School, and the State Agricultural College on the same conditions as the graduates from the city University High Schools."

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

W. M. KNOTSMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

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The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.
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CHEMICAL NOTES ON POPULAR TOPICS. I.

BY PROF. J. T. WILLARD.

DURING the early period of chemical science some of the most brilliant discoveries were made by the electrolytic decomposition of substances. It was observed, too, that under the stimulus of the electric discharge combinations could be effected that do not ordinarily take place; e. g., the production of ammonia by the direct combination of nitrogen and hydrogen, and of nitrogen oxides by direct combination of nitrogen and oxygen. Many important results were thus obtained with the facilities of the early part of this century. As electrical apparatus has increased in power, chemists have not been slow to avail themselves of its advantages. The production of aluminum alloys by the Cowles electric furnace, and later the production of aluminum itself by electrolysis of certain of its natural compounds, has brought us much nearer than ever before to the dream of chemists—cheap aluminum.

Still more recently H. Moissan, the talented French chemist who first isolated fluorine a few years ago, has devised an electrical furnace in which he has accomplished reactions hitherto unknown. The furnace is constructed of lime and is of no great size. It is heated by the passage of a powerful electric current between carbon poles terminating within the cavity of the furnace. By this means he has obtained the highest temperature yet attained artificially, viz., over 5,000°F. At this inconceivably high temperature oxides which are not attacked by carbon in ordinary furnaces are quickly reduced to metals. If the carbon is in excess a portion of it combines with the metal, forming a carbide, as it is well-known to do with iron in forming cast-iron. By this means rare metals can be easily obtained in considerable quantities where hitherto a few grains could be prepared only with great difficulty.

In this furnace the most refractory metals are melted with ease, and even vaporized. Six ounces of gold can be distilled in as many minutes. Copper, silver, manganese, aluminum, and others have been thus volatilized. Even silicon and carbon are vaporized. Lime, hitherto infusible, melts to a thin liquid, and by increasing the current is readily distilled. The rapidity with which metals can be fused in this furnace makes it very useful in experimental research. Moissan is applying it to the solution of the fascinating problem of the artificial production of diamonds. By melting iron with carbon in this furnace and suddenly cooling the molten mass until a crust is formed around it while the interior is still liquid, and then allowing this liquid to cool slowly, he has produced small but genuine diamonds. The molten iron expands in cooling and the interior is obliged to solidify in opposition to the pressure of the crust first produced by the sudden cooling. The carbon under this pressure separates to a certain extent in the form of diamonds.

Moissan has also observed the combination of carbon and silicon in his furnace. Others, independently, have prepared this compound by the aid of electricity. A powerful current is passed through a mixture of salt, coke, and purest sand contained in a trough of refractory material. The defective conducting power of the mixture rapidly raises the temperature to a point at which the carbon decomposes the sand, uniting with its oxygen to form carbon monoxide, and with its silicon to form silicon carbide.

The silicon carbide so obtained is a beautiful crystalline substance, with a hardness approaching that of the diamond. It is being made in considerable quantity for use in making wheels, etc., used in grinding and polishing. It considerably exceeds emery in efficiency. Its trade name is carborundum.

It is interesting to note in passing that, while carbon by virtue of its wonderful chemical properties is the characteristic element of the unstable compounds of living things, substances which decompose by comparatively slight elevation of temperature, at these highest temperatures yet attained, it is capable of forming stable binary compounds with the metals and other elements. This fact is of interest as indicating the possibility that in the early history of our globe all the carbon was united in such compounds. It has lately been suggested by Dr. T. L. Phipson of England that the earth's atmosphere at one time contained neither free oxygen nor carbon dioxide; that the latter has been formed by volcanic action, and that low orders of plants capable of living in absence

of free oxygen began the accumulation of this gas by decomposing carbon dioxide in the well-known manner. Later, higher plants took part in the process, until with the lapse of ages the present amount of oxygen in the air was liberated. Whether the composition of the air is changing now or not cannot be determined, as sufficient time has not elapsed since accurate methods of air analysis have been devised.

VISIT THE AGRICULTURAL COLLEGES.

THE *Live-Stock Indicator* of Kansas City contains more interesting matter for the farmer than ever before. It has published a great host of good things in the past few months, or since the new managers took charge, many of which have been reproduced in the columns of the INDUSTRIALIST, and the pigeon holes of the exchange editor's desk are now quite well filled with clippings from that paper which await their turn.

A recent number has the following timely article, which shows the hearty interest of the *Indicator* in the Agricultural Colleges and Experiment Stations, and its desire for closer relations between them and the people they serve:—

The Agricultural Colleges were established for the benefit of the farmers, or, to speak more correctly, for the instruction of the farmers' sons in agriculture and the mechanic arts, and the experiment stations almost exclusively for the benefit of farmers. If the farmers avail themselves of the benefits which the Government aims to confer upon them, they should acquaint themselves as fully as possible with the work done at these colleges and experiment stations. The Government provides for placing the bulletins giving the results of the work accomplished at the stations in the hands of every farmer who is willing to receive and read them, and therefore it is to the interest of every progressive farmer to see that his name is in the hands of those to whom the bulletins are sent out regularly. Another way of obtaining information is to secure the attendance of the professors, or of some one connected with the college, at the institutes and other agricultural meetings. This is highly beneficial, not merely to the farmers, but to the colleges and stations, for if the farmers can learn much from these representatives of the colleges and stations they, on the other hand, can learn much from the farmers, both in the way of obtaining the experience of the farm and in the way of keeping themselves in close touch with the farming interests—a matter of very great importance. The farmers, on the other hand, need to keep themselves in touch with the work of the colleges and stations by visiting them as frequently as possible. As a rule, farmers are a modest set of people, and sometimes have the idea that men in charge of stations of this kind are not always willing to receive them. In this they are greatly mistaken. We have never known any professors, who are at all competent for the business, who were not far more than willing to show the farmers of the State everything that is to be seen in connection with their work and to explain their methods fully. It is not always that time can be spared for going into details, but there are always students in connection with the colleges who are competent to explain everything fully, and be benefited themselves by the explanation. So important are the visits of farmers to the agricultural colleges and experiment stations regarded in some of the Eastern States, that excursions with reduced rates are planned by which farmers from a large section of country are given the opportunity at small expense to visit these institutions and understand their workings fully. As high as fifteen hundred farmers in a day have visited the Massachusetts Experiment Station. We do not see why this plan may not be followed in our western colleges. We do not see why excursion rates should not be given at stated times to Manhattan, Madison, Ames, Lincoln, and Columbia, by which hundreds of farmers could, at the right season of the year, acquaint themselves with the work carried on at these various stations. We are satisfied that it would be as beneficial to the colleges and stations as it is to the farmers, and that by this method agricultural education could be very greatly promoted.

THE WEATHER FOR 1893.

BY PROF. E. R. NICHOLS.

Temperature.—The mean temperature for 1893 was 52.03°, which is .56° below normal. There have been thirteen colder years, and twenty-two warmer. The maximum temperature was 109°, on September 13th, being 7° above normal, and occurring forty-six days later than usual. The minimum temperature was -6°, on February 7th, being 6° above normal, and occurring twelve days later than usual. The latest killing frost was on April 23rd, and the earliest killing frost on Oct. 15th, each three days late, making the number of days between killing frosts 175, or normal. The monthly mean departures from normal were as follows: January, -2.10°; February, -3.87°; March, -.63°; April, 1.12°; May, -3.05°; June, .32°; July, 2.10°; August, -3.70°; September, 1.41°; October, 1.05°; November, -2.41°; December, 4.37°.

Barometer.—The mean pressure for the year was 23.84 inches, which is .05 inch above normal. The maximum was 29.69 inches, at 2 p. m., February 7th, the minimum, 23.02 inches, at 2 p. m., June 6th,—a yearly range of 1.67 inches.

Rainfall.—The total rainfall, including melted snow, was 27.05 inches, which is 3.01 inches below normal. The number of rainy days, including snows, was 63, which is two above normal. The snowfall was 14.20 inches, which is 1.32 inches below normal. The month-

by mean departures from normal in inches were: January, —.81; February, —.15; March, —.32; April, —1.44; May, 1.66; June, 1.83; July, —.37; August, —.59; September, —.59; October, —1.55; November, —.54; and December, —.17. The latest snow occurred on March 16th, three days later than normal, and the earliest snow November 11th, thirteen days earlier than normal.

Cloudiness.—The mean cloudiness was 25.6, which is 14.2 below normal, being the least cloudiness in thirty-six years. The cloudiness for each month was below the monthly normal.

Wind.—The total miles of wind for 1893 was 94947, which is 4706 miles above the five years average. The mean daily velocity was 260.27 miles, and the mean hourly, 10.84 miles. The maximum hourly velocity was 45 miles, which is the least in the five years.

In the following tables the missing data is supplied from the corresponding means where needed for comparison:

THIRTY-SIX YEARS—1858-1893.

YEAR.	No. of Rains.	Rain, incl. snow.	Snow.	SNOW.	FROST.	Growing Days.	Mean Temperature.	MAXIMUM TEMP.	MINIMUM TEMP.	Yearly Range.	Min. Winter Temp.	Mean Bar.	Maximum Bar.	Minimum Bar.
				Latest.	Earliest.	Latest.	Earliest.	Degrees.	Degrees.	Date.	Date.			
1858	80	38.98	17.07	4-12	11-19	4-14	10-7	176	39.8	52.55	104	116	120	100
1859	58	36.21	15.75	3-17	11-12	4-22	10-5	160	45.5	53.55	104	109	122	98
1860	30	15.32	14.20	1-25	11-2	5-1	10-12	164	28.2	57.06	115	101	121	96
1861	51	34.66	18.50	2-26	12-2	4-13	10-24	201	37.6	54.17	99	108	120	98
1862	54	26.20	17.75	2-17	12-29	4-13	10-24	194	38.0	53.21	103	109	114	98
1863	66	40.45	25.75	2-23	10-22	4-20	10-5	163	40.4	54.26	96	109	114	98
1864	63	20.25	11.00	3-31	11-9	4-25	10-8	166	51.2	52.74	104	109	117	98
1865*	70	35.13	14.30	3-15	11-24	5-11	10-12	154	41.4	53.54	93	109	117	98
1866†	60	25.85	19.60	3-13	12-15	4-20	10-23	185	39.4	52.73	98	107	117	98
1867	57	26.50	10.50	3-13	11-28	4-11	10-30	202	41.1	51.04	95	107	114	98
1868	63	30.09	14.70	2-26	11-9	4-13	10-8	178	43.3	50.98	98	107	114	98
1869	74	27.66	8.30	4-2	10-22	4-13	10-15	185	44.2	48.97	93	107	114	98
1870	65	22.10	5.00	3-14	12-1	4-17	10-17	197	44.2	50.98	98	107	114	98
1871	59	28.84	14.80	3-8	11-23	4-11	10-15	187	44.2	50.98	98	107	114	98
1872	56	35.78	15.30	3-21	12-10	5-1	10-10	162	43.5	51.22	98	107	114	98
1873	59	25.98	16.25	2-24	12-6	4-25	10-11	164	48.2	51.58	104	108	114	98
1874	49	18.51	33.50	3-28	11-18	4-22	10-17	172	47.8	50.22	110	108	114	98
1875	61	18.16	8.25	3-30	11-12	4-16	10-17	184	45.7	50.19	98	108	114	98
1876	49	45.86	21.50	2-27	12-25	5-1	10-29	184	39.5	51.63	95	107	114	98
1877	67	41.09	6.50	2-23	11-7	5-1	10-3	184	47.1	54.14	100	107	114	98
1878	74	39.12	22.75	3-9	10-26	5-8	10-22	172	43.7	54.43	97	107	114	98
1879†	65	36.96	6.85	3-13	11-28	4-4	10-24	203	41.7	53.50	97	107	114	98
1880	52	29.39	6.18	12-1	11-10	4-24	10-17	185	47.5	53.98	103	107	114	98
1881	55	28.99	27.25	2-7	11-17	4-12	10-19	190	44.8	54.32	98	107	114	98
1882	58	28.43	14.00	1-1	11-16	4-12	10-14	172	47.6	50.80	98	107	114	98
1883	57	36.79	5.75	1-1	12-25	4-12	10-4	163	39.9	51.32	98	107	114	98
1884	64	33.72	11.75	1-13	11-23	4-12	10-4	175	35.2	50.98	99	107	114	98
1885	59	24.89	13.00	2-8	12-8	4-12	10-1	177	32.0	52.78	110	107	114	98
1886	60	30.10	22.00	1-1	12-10	4-24	10-11	170	31.2	52.68	110	107	114	98
1887	64	29.92	18.60	2-8	12-10	4-24	10-11	177	28.4	51.28	107	107	114	98
1888	54	31.29	15.00	2-8	12-10	4-24	10-11	177	34.8	52.20	101	107	114	98
1889	49	30.97	18.32	2-8	12-24	5-3	9-27	147	31.7	52.86	107	107	114	98
1890	66	23.01	14.97	2-8	12-24	4-5	9-29	171	31.3	52.00	102	107	114	98
1891	61	20.56	28.43	2-6	12-6	4-9	10-8	182	28.0	51.74	106	107	114	98
1892	76	27.26	24.55	2-20	11-16	4-23	10-15	175	25.6	52.08	109	107	114	98
1893	63	27.05	14.20	3-16	11-11	4-23	10-15	175						
Means.....	61	30.06	15.52	3-13	11-24	4-20	10-12	175	39.8	52.64	102	107	114	98

* October, November, and December wanting.

† January, February, March, and April wanting.

‡ January wanting.

1893.

MONTH.	No. Rains.	Rain.	Snow.	Prev. Wind.	Mean Temp.	Max. Temp.	Min. Temp.	Mean Bar.	Max. Bar.	Min. Bar.
January	1	.02	2	N	22.99	53	-1	28.90	29.33	28.39
February	6	.89	6.5	N	26.69	61	-6	28.95	29.69	28.31
March	3	.99	2	S	39.65	87	6	28.83	29.43	28.17
April	7	1.28	2	NW	54.34	98	26	28.72	29.07	28.04
May	9	5.73	2	S	60.85	91	31	28.77	29.05	28.25
June	8	6.26	2	S	73.94	100	50	28.78	29.11	28.02
July	7	4.29	2	S	78.60	101	54	28.78	29.01	28.52
August	9	2.92	2	N	72.26	101	41	28.87	29.14	28.61
September	4	2.45	2	SW	69	109	34	28.80	29.19	28.27
October	2	.71	2	S	55.41	95	24	28.84	29.31	28.44
November	3	.81	2	SW	37.10	79	10	28.91	29.31	28.39
December.	4	.70	5.5	SW	34.13	68	4	28.94	29.49	28.45
Sums.....	63	27.05	14.2	S	52.08	109	-6	28.84	29.69	28.02

WIND—1893 AND 1889-93.

MONTH.	Total Miles.	Mean Daily.	Max. Daily.	Min. Daily.	Mean Hourly.	Max. Hourly.
January	6667	215.06	496	55	8.96	36
February	7747	276.68	494	101	11.52	33
March	10231	330.03	627	33	13.75	39
April	10172	339.06	652	92	14.12	45
May	9191	296.51	597	98	13.35	42
June	6858	228.60	362	104	9.52	37
July	7521	242.62	435	103	10.11	30
August	5667	182.80	504	64	7.62	29
September	7283	242.76	539	101	10.12	41
October	8741	281.96	500	108	11.75	32
November	6966	232.30	467	48	9.68	38
December	7903	254.93	466	65	10.62	27
1889	76494	209.57	614	43	8.73	47
1890	95081	260.50	659	40	10.85	51
1891	90684	248.45	691	32	10.35	56
1892	94000	256.83	963	31	10.70	49
1893	94947	260.27	652	32	10.84	45
Means.....	90441	247.12	716	36	10.29	50

Influence of Good Farm Papers.

In your thanksgiving issue you had in your editorial column a short sentence that struck me very forcibly—"American farms harbor too much scrub stock." While you properly state that such a state of affairs is beyond comprehension, and to a great extent you are correct, I think I can give you a very good reason for this state of affairs. I am identified solely with the swine-producing industry, yet I am also an admirer of any class of fine stock. Now, I will tell you how I explain the condition of which you speak. When I call at a farmer's house, and while we are warming by his good fire, I will make inquiry as to what newspapers, periodicals, etc., he may have on file and is reading every week. If I find the *Breeder's Gazette* and other papers and magazines in that line, I can at once decide upon the kind of stock I will see when we enter his barn-yard. His horses will be purely-bred or close up to it. He shows you with pride his fine two-year old bull, and as we come back by his herd of swine he points out the elegant registered male he has just received.

If you are a stockman you are surprised to see such

FARM NOTES FROM VARIOUS SOURCES.

All of the stock on the farm are kept for profit, and the better they are cared for the greater the profit. Work on the principle that if it pays to keep stock at all, it pays to keep them well.

The small farmer can be a stockman, as well as the man of broad acres. Only his methods must be a little different. The Jersey cow, a few fine pigs, early lambs, and well-bred fowls are the things he must put his faith in.

A fertile soil contains lime, phosphoric acid, potash, and nitrogen in some form. Supplying manure is only supplying these materials. The decay of the manure makes them available as plant food. Plants cannot eat or drink coarse, raw manure.

One of the best economies that can be practiced on the farm is the saving of barn-yard manure. There is an extravagant waste of this article. And it is a kind of economy that does not make hard times worse by depriving some one of work or wages.

The best and cheapest way to secure the needed potash for our land is to carefully bed the stock, and save the liquid manures. The money and labor expended in this way will bring a good return to you through much larger crops.—*Practical Farmer.*

The difference between different kinds of feed, in short, the advantage that is gained by having a balanced ration, is just beginning to widely attract attention. There are few subjects which farmers can more profitably study than this.—*Practical Farmer.*

Have a place for every tool or implement used on the farm, and store it under shelter during the winter, first giving the parts that are composed of iron a coating of kerosene as a protection against rust, while the parts composed of wood should be well rubbed with linseed oil.

The boy on the farm will soon be the farmer. It is well that his earlier impressions of the calling to which he belongs will be such as make him believe there is no place to live like the farm, instead of believing it to be the place from which he will escape as soon as he is old enough.

Farmhouses should be built with all conveniences possible, not only to add to the comfort of the family, but also in order to reduce the labor of those who have charge of the household work. There is no reason for omitting anything in the construction of a farmhouse that may be needed.

In the leading market it continues to be the old story, of a surplus of scrubby and half-finished cattle, and not enough of the really choice to meet the demand. Do not try to force half-finished goods on the market. You cannot coerce purchasers into buying such, unless at their own price.—*Practical Farmer.*

Low prices for the staples serve some good purpose. They make us consider seriously if there are not better methods of cultivation that we might follow, and set us to looking for a wider diversity of crops. These things have a permanent effect upon our agriculture, lasting even after prices have been restored to their normal level.—*Practical Farmer.*

The reason that confidence men and swindlers usually aim to give the farmer the benefit of their blandishments is that so many farmers do not keep themselves posted as to the goings and doings of these gentry. The victims of the threadbare green goods game are ninety-six per cent farmers. There is but little sympathy deserved by a man who is silly enough to go into that trap. Then signing a contract with a stranger and afterwards learning that he has signed a note of large amount, is another old game, of which the farmer is almost the only victim. The farmer himself opens the gate for these scoundrels to get at him by always buying of strangers because the latter promise goods a little cheaper than the well-known reliable dealer in the neighborhood.—*Colman's Rural World.*

There is a farmer in Ohio who has made a conspicuous success of his business by the application of the best business methods to it, who says of his success: "We have heard too much on the discouraging side of late years. True, there are wrongs outside the farm that ought to be righted, and little by little they will be, if we do not neglect our duty. But during these years of depression in agriculture the writer has made money as fast or faster than he could have done in any other business on the same capital, and so have many other farmers here and there. Most of us can do much toward helping ourselves out of hard times." This testimony could be repeated in every locality, for it is the same everywhere, as it always has been, that labor, or effort of whatever kind it may be, is profitable and successful when it is well directed.—*Colman's Rural World.*

Education a Foe to Vice.

While, in a general way, I admit that there is plenty of wickedness and vice in the world, I am happy in the thought that the world is getting better all the time. Wickedness and crime always have existed, and in far more horrible forms, and more generally than they do now. Education, with the refinement it brings, is the great moderator, and the most powerful foe to vice. Instead of worrying ourselves sick over the contemplation of the wickedness of the world, we might rest easy in the conviction that the world to-day is better than it once was, and that it will be better by and by than it is now. The great reformers who attack the slums of cities, and other vices, but neglect to bring up their children as they should, had better let charity begin at home. Let your children have a common-sense education. This is the most potent weapon we have with which to fight vice.—*T. Greiner, in Farm and Fireside.*

fine individuals, and you ask him where he found such animals. In all probability he will tell you he saw Messrs. So-and-So's advertisement in the *Breeder's Gazette*, and bought this stock of them. You will also find him posted on the different phases of the stock business, such as pedigrees, feed, diseases, etc. We have a pleasant visit with him, and when about to leave ask him his price on two choice pigs in his herd, and he informs us that every pig he has is engaged at good figures. We bid him good day and drive ten miles further north.

We stop again at a farm house in the edge of the timber and tie our team. As we enter the gate two lop-eared hounds howl us a welcome. We are invited in by the honest farmer, and in the course of conversation the question as to what he reads is propounded. He informs us that he does not take any papers now; that J. Smith sent him the *County Rustler* during the campaign, and when he wouldn't vote for him he stopped it. Well, now for the stock.

We find that his horses represent about three-fourths of the different breeds tangled up in the same animal, and while looking at his conglomerated collection of cattle he points out an old bob-tailed brindled cow as the best milch cow in the whole country. His exhibit of hogs is out of sight, but he mounts the rail fence and jerks out few "hoor-hees" and a few long-legged spotted, swirley, lean porkers put in an appearance. He informed us that they are hustling for acorns and he guesses they won't come up. You ask him why he does not take a stock paper, and he will quietly inform that he "knows as much about stock-raising as them fellers."

I place these two farmers ten miles apart for the reason that the first man's influence will extend over a radius of that extent. The time has come when the reading farmer is about the only one "in it." You put the *Breeder's Gazette* in the hands of the scrub stockman, and the scrub must go.

I have been in a position (being an ex-postmaster) where it came under my immediate observation as to the number of farm and stock journals read by the farmers in this locality, and the superior quality of their farm animals, from the chickens to the horses, attest the benefits of such reading matter. I am free to say that no farmer can afford to do without his stock paper. A single suggestion gained by the exchange of ideas is often worth ten times the subscription price of the paper. Let us work together to spread the circulation of our stock journals, and we will drive the scrub from the farm.—*Correspondent Breeder's Gazette.*

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Work on Science Hall was suspended yesterday for the first time this month.

A revised program of the Short Course in Agriculture will be published next week.

The young ladies in the Floriculture Class are just now propagating roses from cuttings.

The drawing classes were in charge of Mr. Emch during Prof. Walters' absence this week.

The annual exhibition of the Hamilton Society is being arranged for the evening of February 3rd.

The Horticultural Department has just bought from the Riley County Nursery of Leonardville 8,500 extra long apple-tree whips for grafting.

The Library has received several boxes of books from the State Bindery, and has just shipped there a large lot of new unbound volumes from London.

Mary C. Wilkin, Third-year, was called to her home at Bow Creek, this week, by the sickness of her mother. She does not expect to return to College this year.

President Fairchild takes part in a Farmers' Institute at Oneida, this week; Professors Walters, Olin, and Georgeson at Hanover, and Professors Popenoe and White at Wellsville.

The first Friday lunch of the term was served yesterday to 111 persons. Wednesday lunches will also be served to the members of the Fourth-year class for the usual consideration—ten cents—"to cover cost of materials."

C. C. Smith, Fourth-year, is quite a poultry fancier. His trio of single-comb Brown Leghorns, which took premiums at the State Fair last September, have just won a first and third premium at the show of the State Poultry Association at Topeka.

At Class-meeting, on Wednesday, the Fourth-year Class elected the following officers for the Winter Term: Lorena Helder, President; Geo. L. Christensen, Vice-president; Phoebe Turner, Secretary; E. A. Donaven, Treasurer; W. O. Staver, Marshal.

Mr. William Cutter, the veteran nurseryman of Junction City, visited the College on Thursday, and, as might be expected, gave most of his time to the Horticultural Department. Mr. Cutter is one of the oldest and at the same time most successful horticulturists in the west.

The College has received through Prof. Georgeson, and he through an old student in Japan, a large collection of Japanese woods and minerals which formed a part of the country's exhibit at the World's Fair. The specimens will find a place in the museum, where they will doubtless be viewed with much interest.

The illustrated article on the Agricultural and Mechanical College of Oklahoma, written for a recent number of the INDUSTRIALIST by Prof. Walters, has since appeared in the *Kansas Farmer*, published at Topeka, and the *Farm, Field, and Forum*, published at Guthrie, Ok. Several other papers of the Territory have asked for the privilege of using the cut for the purpose of republishing it.

The Shop equipment is increased this week by a larger engine lathe than any it has had before. A Pond lathe, originally a good one, bought first by Ulrich Bros., and passed to Sam Kimble, has been owned for a number of years by Mr. Harrold of the Blue Valley Foundry. On account of the growing importance of his feed mill business, he has so little use for the lathe that he has agreed to store it in the College Shop. It is a valuable addition, and thanks are due Mr. Harrold for his liberality.

The usual Friday rhetorical exercises took place yesterday afternoon with the appearance of the Sixth Division of the Third-Year Class. The members delivered excellent selections as follows: "Nature," Olive Wilson; "A Selection from Storey," C. S. Pope; "Daniel Webster's Address to the Mothers of Richmond, Virginia," Cora Stump; "Evolution of Government," B. F. S. Royer; "Rocks our Home," Mary Willard; "Tribute to Liberty," S. J. Wilkin; "Mark Twain's Remarks on New England Weather," Etta Smith; "The Martyrs of Liberty," W. H. Phipps; "Selection from Irving's Description of the Alhambra," Sadie M. Stingley.

A large box of gelatine is received by the Domestic Department, a gift from the manufactory of Charles B. Knox, at Johnstown, N. Y., and the Cooking Classes are concocting all kinds of delicate dishes with gelatine as the base. The new package of granulated gelatine is especially convenient because in the granulated form the gelatine is easily measured with a spoon, and it dissolves very rapidly in warm water. It is a great improvement over the shredded gelatine or that in sheets. The fruits and flowers in

jelly, the charlottes, the gelatine puddings, and the variety of fancy dishes that the class in Household Economy have made and expect to make out of that box of gelatine, bring joy to the hearts and gratification to the appetites of about sixty girls this winter term.

GRADUATES AND FORMER STUDENTS.

E. W. Reed, '92, writes from Avoca, that he cannot do without the INDUSTRIALIST.

R. A. Clark, Second-year in 1889-90, sends a bundle of papers from far-away Sitka, Alaska.

L. A. Spencer, Second-year in 1887-8 was an attendant at the Farmers' Institute at Oneida this week.

Dr. H. S. Willard '89, was appointed county health officer by the County Commissioners of Riley County this week.

Ben Skinner, '91, hopes to pursue post-graduate study in Botany at the College during vacation from his school at Fairview, Kansas.

Fannie E. Waugh, '93, writes from her home at McPherson, Kan., with reference to the possibility of post-graduate study here during the spring term.

The five resident lady members of the Class of '93—Mrs. Louise Daly-Burtis and Misses Laura Day, Margaret Horn, Edith McDowell, and Nora Newell—met one evening recently in a five o'clock tea at the home of the first named. Miss Beverly, Second Year in 1890-92, assisted the hostess in serving.

P. S. Creager, '91, and F. A. Waugh, '91, have secured control of *Smith's Fruit Farmer*, published semi-occasionally at Lawrence for several years past, and have converted it into a monthly and moved it to Topeka. Mr. Waugh, who is Horticulturist of the Oklahoma Agricultural Experiment Station, will probably do the editorial work, and Mr. Creager, it is understood, will be business manager.

A Letter from Queensland, Australia.

Prof. E. M. Shelton, in a letter to Mr. J. J. Mails of Manhattan, writes on matters of general interest concerning Queensland and the country thereabout. Portions of the letter are printed below:—

"Here in Queensland disaster has followed disaster steadily for the past year. There was first of all a succession of strikes by the laboring men; this was followed by dreadful floods of last February, of which you have heard a good deal, but you will never know the half from what has been published. Whole towns were literally wiped out by a dreadful overflow, and in Brisbane business was paralyzed for months, to say nothing of the actual destruction of houses, bridges, and the like wrought by the flood. The floods had no sooner subsided than the banks began to break one after the other, until all had gone in Queensland but three. These 'busted' banks have since been reconstructed, and are generally doing business now as usual, after calling up a good deal of capital from shareholders. This in return, of course, works great hardship to the community.

"Farming in Queensland, except in the north, where sugar-growing is a large interest, is not a great business as with you. The principal industry connected with the soil is wool-growing and cattle-raising. Taking everything into account, I fancy Queensland is the best natural country for sheep and cattle in the world. The whole country is covered with a rank growth of grass, good and bad, even in the forests. As a rule, the forest country is lightly timbered. The trees are scattered here and there, and there is not much undergrowth. Besides the trees have almost no leaves, and the leaves are small and hang down edgewise so that they do not shade the ground, and grass grows as well under the trees as in the open country.

"The great stations—ranches, you would call them—in Queensland are the seats of stock-raising. These stations are some times privately owned, but generally they consist of land rented of the government for thirty years at a rental of so much per acre. The amount of rent varies with the character of the country, from half a cent to three cents per acre, per year. Here it is customary to speak of this station property as consisting of so many miles of country; the acre is too small a unit for computation with these big concerns. To give you an idea of the size of Queensland stations, I may mention that I recently visited one of these ranches which has a frontage on the sea coast of something over forty miles, and which extends back into the country for many miles. Another station, I have in mind has over 250 miles frontage on a single river. Of course cattle and sheep here run out all the year round, and very few people ever think of cutting hay or making other provision for winter feed. Some do put up a quantity of hay which is held year after year for a time of emergency, as drouth. Upon these stations the cattle are often numbered by tens of thousands, and sheep by hundreds of thousands. Generally the quality of station cattle here is very good, vastly better than anything you have in Kansas. I have seen thousands of these cattle in a herd, every one of which is pure-bred Shorthorn, and it will please you, I know, as a Shorthorn breeder, when I say the great bulk of these cattle are Shorthorns. The Herefords are well liked, and there are a few Devons and Polled Angus. But for one of these there are thousands of Shorthorns, and it does not seem likely that the other breeds will soon change the ratio that now exists between these sorts.

"You must not understand by what has gone before that the country is all timber land. In the interior there are great stretches of plain country, covered with the richest grass, and the timber land is divided into so-called forest lands and scrubs. The for-

est land is the lightly timbered country referred to above, but the scrub is a dense tropical growth found mostly along the coast, a perfect jungle of evergreen trees, trailing vines, and creepers, which would puzzle any one to walk half a mile in without an ax with which to hew a path. These scrub lands make the richest and best of farming lands, and are greatly valued for that purpose. As a rule, our forest lands are poor, and grow indifferent crops, while the plain country is often very rich.

"The squatters, as station owners are here called, are not doing well these times. Wool is too low, and beef is almost valueless. You can buy really splendid fat three-year-old Shorthorn steers in Brisbane at \$15 to \$25 per head, and that after they have traveled hundreds of miles to market. The horse business is depressed in like manner. I have been offered here handsome three-year-old Clydesdale geldings at \$5 per head. I could take my pick of droves at that price. You see by this that the American complaint of low prices has not as much behind it as the Queensland complaint to the same tenor.

"We have been in Queensland nearly four years, and on the whole we have all been pleased with the life here, and with our treatment by the people. I have not been able to accomplish what I had hoped, chiefly in consequence of the hard times and the numerous disasters that have overtaken the colony. But if good times come to us again, I expect to help the people here to improvements that will be permanently useful. We have a pleasant home on the banks of the Brisbane river, convenient to town and comfortable in all respects. My garden I should like to have you see. It grows oranges, peaches, and half a dozen other fruits peculiar to this country, and we have such a wealth of roses and other flowers as you have never seen in Manhattan. Mrs. Shelton and the children all enjoy life here, and never for a moment mourn the day we left Kansas. I like Kansas as well as ever, but it is an awfully uncertain State, as you will admit, I am sure.

"We are just now entering upon our summer season. October is the first of the summer months, practically, and it has set in this year very hot and dry. During the past week the mercury has gone up to 97 degrees once or twice, thus establishing a record which has not been equalled here for many previous years."

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Jennie R. Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Jonian Society.—President, Phoebe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, C. R. Hutchings; Vice-President, E. L. Frowe; Recording Secretary, C. N. Brobst; Corresponding Secretary, A. P. Carnahan; Critic, V. I. Sandt; Marshal, J. A. Hoge; Board of Directors, J. A. Scheel, B. W. Conrad, F. A. Dawley, F. Smith, C. S. Evans. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

Scientific Club.—President, E. R. Nichols; Vice-President, A. S. Hitchcock; Secretary, Grace Clark; Treasurer, F. C. Burtis; Programme Committee, E. R. Nichols, J. T. Willard, M. A. Carleton. Meets on second and fourth Friday evening of each month, in the Chemical Laboratory. Admits to membership advanced students and college officers.

January 13th.

The Hamilton Society was called to order at 7:30 p. m. by Pres. Staver. Prayer, F. A. Dawley. This being the first session of the term, officers were elected. C. R. Hutchings was elected President on the first ballot. E. L. Frowe, Vice President; C. M. Brobst, Recording Secretary; A. P. Carnahan, Corresponding Secretary; J. Poole, Treasurer; J. H. Hoge, Marshal; J. A. Scheel, F. A. Dawley, B. W. Conrad, C. S. Evans, and F. E. Smith, Board of Directors. On the whole, the election went off very quietly, and all seemed well pleased with the results. Five new members joined, and seven more names were proposed for membership. Among the visitors was noticed A. D. Rice, an honorary Hamilton who always meets us with a good word. The program of the evening was carried forward to the next session. At 10:30 the Society adjourned. F. Y.

January 12th.

The Alpha Betas, in first regular session this term, was called to order by Pres. G. L. Christensen. The program opened with a violin quartette, by Messrs. Fryhofer, Christensen, and Clothier, and Grace Secrest. Prayer was offered by D. L. Timbers. Marshal M. A. Limbocker then administered the oath of membership to Messrs. N. E. Mill and J. H. Rice. A. E. Ridenour, in an oration, took a retrospective of the year just closed, and a prospective of the year before us. Miss Philbrook then entertained the Society with a select reading, "My City Cousin," followed by a well-rendered declamation by Geo. Fryhofer. The Society paper, "The Gleaner," edited by Grace Secrest, lacked nothing in quality or variety of productions. The editor, a member of the Cooking Class, adopted for her motto, "Blessed are the Second-year Girls, for They Prepare the Friday Lunches." Sadie Moore in a charming manner rendered a selection entitled, "The Old Church Organ." After recess, a guitar solo was given by Con Buck, that it was appre-

ciated was shown by the hearty encore given him. After extemporaneous speaking, the order of election of officers was taken up, and the following elections were made: President, Jennie Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva Palmer; Corresponding Secretary, Geo. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps. A quartette by Messrs. Fryhofer, Harling, Coffey, and Spaulding closed the exercises. A. E. R.

January 13th.

The Ionian Society was called to order by Pres. Lyman immediately after chapel, and opened with congregational singing, after which Ethel Patten offered prayer. Roll-call showed a good number of Ionians present. The program, excepting the music, was postponed until the following week. We were first favored with a vocal solo by Louise Spahr. Election of officers for the ensuing term resulted as follows: President, Phoebe Turner; Vice-President, Hortensia Harmon; Recording Secretary, Mary Wilkin; Corresponding Secretary, Maggie Correll; Treasurer, Lynn Hartley; Marshal, Lorena Helder; Critic, Mary Lyman.

The usual order of business was taken up, and under propositions for membership, seven names were proposed. Music was interspersed through the order of business as follows: Piano solo by Blanche Hayes, and a vocal duet by Mary and Gertie Lyman.

I. R. F.

January 13th.

The Webster Literary Society was called to order at 7:30 by President Ames. This being the regular night for the election of officers, nearly every number was there to answer to roll call, and from the way things moved off it was plain to be seen that all were full of enthusiasm. The members who were on the program seemed especially interested in having a lively session. In anticipation of the amount of time which would necessarily be consumed in the election, the order of debate was omitted. The program was opened by G. A. Dean, who rendered a touching declamation, the theme of which was "Garfield's increasing courage from the time of his assassination to his death." A witty oration, characteristic of its writer, E. H. Freeman, on "What are We Living For?" was comically introduced, and during the whole of the discourse held the attention of the Society. A soul-rousing solo was rendered by L. W. Hayes upon his harmonica, Mr. Wheeler accompanying on the organ. Fifteen minutes were spent in extemporaneous speaking. A few of our ablest members were called upon, and in a mock serious way discussed the question, "Have, or should the women have, the right to make matrimonial propositions?" The general belief of the speakers was that the fairer sex should have the same advantage as the lords of creation, and showed what a blessing it would be to some of the spinsteresses and bashful young men of our society. An instrumental duet by A. G. Bittman and D. C. Arnold closed the program. Unfinished business being disposed of, we were soon hesitating over the nominees for President, but after the ball was started four candidates were soon in the field. Our worthy member, J. M. Williams, however, was elected by a sweeping majority over all. After an hour and a half spent in nominations and heated discussions, we emerged from the order of new business with the following additional officers: Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. A. Donaven, H. G. Pope, J. W. Evans, and S. R. Vincent. S. R. V.

Ornamental Farming.

There is nothing so pleasing to the eye as beauty; nothing so disgusting as slovenliness. Beauty gives an air of prosperity, while slovenliness points to failure. While you are putting up your poultry buildings, why not at once give them a coat of paint, why not paint the fencing; why not rake up the rubbish, and give the place a clean appearance? All this work makes the place look attractive. Not only do this work around the poultry, but give the same treatment to the barn, the other buildings and the surroundings. It costs very little to improve, while the appearance will not only please the visitor, but give you a lot of encouragement. The writer knows of a farm on which all the buildings have been treated with a generous coat of paint. This treatment is given annually. The barn, wagon sheds, poultry houses, in fact, every building on the farm, is painted red. All the rubbish about the place is cleaned up every week and in spring the trees are whitewashed, and nothing left undone to make the farm bespeak careful attention. The question may be asked, "Does such work pay?" We never yet have seen a single case where cleanliness did not pay in attractiveness, in health, and in cash. If a man wants to sell, and his place looks slovenly, how hard it is to convince the intending buyer that there is any money in it. A case of that kind came under the observation of the writer some time ago. Two poultry farms were for sale in the same town. The one was kept in the neatest condition, while it was doing a splendid business, was not any more profitable than the other, which had a sort of haphazard look about it. A buyer came to town, and after examining both places, bought the well kept one for \$2,500, while the other shortly sold at \$1,400. The former was neat and clean, the buildings were painted, and an air of prosperity seemed stamped upon the face of it. This is what we call ornamental farming. There is nothing gaudy about it, nothing foolish, but simply good, honest work, for which there is always a good reward. Slovenliness is never paid for.—*Live-Stock Indicator*.

Family Ties Strengthened on the Farm.

The family idea is allowed more scope for development on the farm than elsewhere, and in proportion the individual is allowed ampler latitude in the country. Every creature is endowed with natural abilities and aptitudes which if symmetrically developed would fit him for a special place in the world with special force in discharging the duty or privilege of that place. In the country the natural "bent," as we call it in horticultural parlance, asserts itself strongly because there is no pressure of environment seeking to push all into the same groove. So we find the children of the farm, strengthened and sharpened by the manual training of the farm, strengthened and refined by the pure thinking of the farm, going off to make great soldiers and preachers, great statesmen and poets, great singers and engineers. They go into these vocations with virile powers augmented by the spirit of the farm home. It is right they should go, but the home, the family home, should be maintained on the farm—maintained with pride. In each generation there will surely be some with a taste for the country itself; someone with the philosophic temperament who can look upon the strenuous race for fame or wealth without ever an impulse to try for the goal. The patriarchal idea of olden times, or indeed of these times in other lands, might well be engrafted upon our customs. The false proverbs so glibly repeated concerning the impossible size of a house for two families, together with the outrageous sentiment manufactured by the funny paragrapher about mothers-in-law, are influential and harmful. Living with other people is good discipline, and well calculated to promote proper consideration for others and to teach self-restraint. Family life is accented in the country as nowhere else. The isolation renders dependence on others impossible. Three times a day at the table and in the evening the entire household is together. The father's business is transacted at home, and naturally the association between parents and children is very close. The events of the day and of the season are the mutual topics of conversation for old and young, the subject of childish inquiry and philosophic comment. In the country, older people have time to talk to children sensibly and to take them seriously. The long drives and walks alone with father on the farm would in the confessions of many a man and woman be acknowledged as the determining point of an after career. It is undoubtedly true that the first six years of human life are immeasurably more important than any like term later; the impressions then received make and mould character. O, for worthy mothers! Older people do not seem to realize how sincere they are with a very little child when alone with the child. In the country the child may be alone with its father or mother often, and the cardinal points of life are decided in these tender years. Men sometimes think they "turn over a new leaf" when they are but returning to their first convictions.—*Virginia G. Meredith, in The Breeder's Gazette*.

Thin Out the Horses.

The first-class merchant never allows inferior stock to accumulate on his shelves. He puts the price down without the least regard to what it cost him, and if it does not sell, he puts the price still lower until it does sell. He knows that undesirable goods can under no circumstances bring him a profit, and the longer he keeps them the more he loses in the transaction. They take up shelf room, lock up money, and are an eye-sore to the establishment. In doing all this he is acting on a sound business principle.

Farmers who have a number of horses on hand for which they have no special use, and which will not grow into money, should do exactly the same thing. Inferior mares, or those for any reason not suitable for breeding purposes, and which have obtained their growth, as well as geldings that have been matured, should find their way to the market at some price. They are of no use on the farm, being simply consumers of the grass and grain products and occupiers of the shelter, and the quicker they are disposed of the less will be the loss.

It is not a question of making money with these horses, but of the amount of money they will cost a farmer. Every day that they are kept involves a small loss, and, therefore the quicker they find a good market the better. The answer that will be made to this is that there are no buyers for this class of stuff; that eastern shippers want only the best, and that, in fact, these unprofitable horses are simply the culls that eastern buyers will not accept. This is very true, but that does not stop the loss nor give promise of future profit. Fortunately, there are markets that will take these horses at some price, and we know of no better way than to send them to Chicago or Kansas City and sell them at auction. This will take them out of the country.

The answer will be made that the farmer, as a rule, has only from one to three or four, and seldom or never a carload, and that he cannot afford to take them to these markets. This, again, is very true, but it is possible for a number of farmers in a township or neighborhood to make up a car load and send one of their number to the market with the horses, dividing the expense. These horses should be shod before, but not behind; should be in good condition; in fact, no horse should be sent to market poor. It will always pay to fatten them up before shipping. We believe this is the best way, and, in fact, the only way we know of getting rid of this class of stuff and making room for stock that will pay some profit instead of being a certain loss. Having done this, and pocketed the loss with the best grace possible, the next thing to do is to resolve under no circumstances to raise any more of that kind.—*Live-Stock Indicator*.

Short Courses in Agriculture.

Many agricultural colleges now offer short winter courses in agriculture. They are doing all they can to widen the opportunities for young men to get instruction in agriculture. The courses are carefully arranged, and the instruction is practically free. Many have attended these winter schools of agriculture with profit and pleasure. More will do so. There never was a time when there was greater need for young farmers to have all the instruction in agriculture they can possibly get. The winter school of agriculture cannot give them all they need, but what it does give them is most valuable. The educational work of the school does not stop when the students return home. Not a few will continue the study, reading and investigation commenced while in attendance at school. This is one of the objects of the short course in agriculture, to start the young farmer in the right road. Through these short courses the agricultural colleges have gained students for the full, regular courses.—*Farm and Fireside*.

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The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.
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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.
General information concerning the College and its work—studies, examinations, grades, boarding-places, etc.—may be obtained at the office of the President, or by addressing the Secretary.
The Experiment Station should be addressed through the Secretary.

CO-OPERATIVE CREAMERIES IN DENMARK.*

BY PROF. C. C. GEORGESON.

I have so far confined myself to the description of private dairies, large and small. I shall now consider the organization and work of the large number of co-operative creameries throughout the country. It is chiefly these that benefit the small farmers. They are patronized by men who, as a rule, keep but a limited number of cows, say from one to fifteen or twenty head, though occasionally the milk from much larger farms is also worked up in these creameries. It is from this class of creameries that the bulk of the export butter comes, and it is really these that fix the standing of Danish butter in foreign countries. There are two classes of creameries, which are distinguished from each other only in ownership, but which are alike in methods of operation and all other characteristics, and they can therefore be treated together under the above heading. The first class is the co-operative creamery proper, which is owned in company by all those who deliver milk there. The second class is the kind so largely represented in America in which the creamery plant is owned by one man, or at most by a few individuals, who buy the milk from the farmers of the neighborhood. The former are called "Andels" creameries, which is, properly translated, co-operative creameries. The second class is called "Fælles" creameries, and the name denotes delivery of milk by several individuals to the same creamery. In the former class, the producers of milk have a personal interest. Their profits depend upon the management of the institution. In the second class, they have no direct interest—it is merely a place where they sell their milk at so much per cwt., and the owner takes all the financial responsibility. The latter class of creameries has constantly decreased in number, while the former has constantly increased. When it was found that co-operative creameries could be conducted without disagreement among those interested, and on an economical basis which would yield the best attainable returns, everybody wanted to join them. The Fælles creamery was doomed to go.

None were willing to grant profits to the creamery owner if they could just as well share them. The creamery owners, on the other hand, became obliged to pay so much for their milk, if they wanted any, that a profit was practically impossible, and it has not unfrequently happened that when the farmers did not get the prices they thought they ought to have, they have built a co-operative creamery to which they have sent their milk and left the other creamery owner out in the cold.

Co-operative creameries had their origin in the desire on the part of the small farmer to make the most possible out of his dairy. He had the example of the large farms before him, where the dairy had always been an important and well-paying branch. How would it be possible for him to get relatively as much out of his few cows as the large farmers got out of their cows? The latter found it economical to place the dairy in the hands of expert help who could make first-class butter, which would realize the top market price; but the wives of the small farmers were by no means expert dairywomen. Their butter could not compare in quality with that produced upon the larger farms, nor was there any hope of so improving their practice that any considerable number could be counted on to make first-class butter. The only way open was for the farmers in the district, who were all equally interested, to unite, build a creamery, and deliver their milk there for creaming and churning; and this was what they finally did. But it resulted in this through some intermediate steps. The first of these was taken during the winter of 1881-'82. A few farmers in a certain part of the peninsula, after consultation, conceived the idea of engaging an expert at a stated salary per year, who should go from farm to farm and give instruction in dairy methods, and act as joint adviser and agent for them all, which position was offered to a Mr. Andersen, an educated man in the neighborhood. He saw, however, the insuperable obstacles to this course. Even though each farmer might provide the necessary utensils and proper accommodations for the dairy, still their wives and daughters, his prospective pupils, would not all be equally apt learners, and those who found that the enterprise did not bring the desired results would soon withdraw from the arrangement. So for a time it amounted to nothing. But Mr. Andersen made them the proposition that if they would furnish him with a

*Extract from Prof. Georgeson's Report on the Dairy Industry of Denmark, to United States Department of Agriculture.

proper creamery and allow him the necessary help he would receive and churn the milk under his personal supervision and for a stated yearly salary. After many meetings, it was finally decided to adopt this plan. But it was found that a sufficient number of farmers to represent 400 cows could not be obtained, and Mr. Andersen refused to begin operations with less. Three hundred cows were subscribed at once, and there were one or two hundred more in the neighborhood, but their owners did not think well of this new and untried co-operative scheme. They were willing to sell their milk, but did not care to risk anything on the proposed plan. This obstacle was finally overcome by Mr. Andersen, who offered to buy their milk on his own account, and on this basis, partly "Fælles," the first co-operative creamery in Denmark was started in 1882. It was a task of no little difficulty. There was no similar institution from which even a hint could be taken in regard to the best method of organization, or the drafting of the laws and regulations, which it became necessary to have; but it was fortunate, very fortunate for the future of the enterprise, that those to whom this task of the first organization was assigned were able, far-seeing men. The constitution which was finally adopted proved to be so satisfactory that it has been more or less literally copied in the organization of all later co-operative creameries. This first plant, including building, machinery, and all dairy utensils, cost 8,000 crowns (\$2,160). The enterprise proved to be a success from the start, and those farmers who at first hesitated to join the organization, but preferred to sell their milk, one after another joined the company, and by the end of the second year all who delivered milk there were members.

The co-operative creameries have benefited the Danish farmers in more ways than one. They have been educators in addition to being the means of augmenting their incomes. The common interest which they had in the creamery brought the farmers together in frequent consultation, at which the brighter and more enterprising minds among them influenced the easier-going ones to adopt better methods. It compelled those who had not been in the habit of keeping accounts to study the art of book-keeping in order to assure themselves that they received pay for all the milk they delivered.

THE ARMOUR PACKING-HOUSE.

BY JOSEPHINE HARPER.

THE Armour packing-house at Chicago is the largest of its kind in the United States. The Packing houses, including the machine-house and boiler shops, cover a ground area of 55 acres, with a floor area of 145 acres. Not far from the packing houses are the car shops where the refrigerator cars are made, employing about 300 men. Each car costs about \$1,000, and lasts between eight and ten years. Two miles away the Armour glue works, covering 18 acres and employing 800 men, produced last year 12,000,000 pounds of glue and 13,000 tons of fertilizers.

The dressed beef department employs about 1200 men, who kill and dress some 5,000 cattle per day. The steer is killed by being struck on the head by an iron-headed mallet, when it drops to the floor and is immediately hung up, beheaded, stripped of its hide and disemboweled, taken to the chill-room, where it is kept from 40 to 70 hours just below the freezing point. It is then taken out, placed on a platform, divided into quarters, and legally inspected as to its soundness by an officer of the health department and a certificate to that effect affixed to be sent to the buyer, lastly put in a refrigerator car and sent to all parts of the country. The beef not disposed of in this way is packed and constitutes the Armour pressed beef of commerce.

The hides are packed in salt in hide cellars to be sold to the tanners. Before long the Armour Company intend building and operating their own tanneries. After the beef and hide of the steer are disposed of, there are still large products left, which formerly went to waste in part, that are now wholly utilized. The suet fats are manufactured into oleomargarine oil, the basis of butterine, of which quantities are exported to Holland, Germany, and other European countries. The exports of this oil alone amounted last year to 91,580,000 pounds, valued at \$9,000,000 or over. The other fats are rendered into tallow and sold to soap makers; the horns, shin, and blade bones are sold and made into combs, buttons, knife-handles, and other articles. Other bones, hoofs, sinews, and hide trimmings are made into glue and fertilizers. With the last-named products are put the blood and offal. Phos-

phate is made from some of the bones, and neat's foot oil from the feet. The bladders make receptacles for various articles. The intestines are used to cover bologna and other sausages. The stomachs furnish tripe. From the ox-tail is produced the soup so called. The tail ends are sold to hair-mattress makers. The same economy is observed in regard to the hog and sheep products.

The sheep pelts are sold to tanners, and the wool, after being washed and dried, is sold direct to the cloth mills, and amounts to about 1,500,000 pounds annually. Of the hog, the bristles are sold to brush makers and the hair to curled-hair manufacturers. The stomach furnishes pepsin and pancreatin. Each hog yields thirty pounds of lard on an average, and last year 1,400,000 hogs were slaughtered, making a total of 52,000,000 pounds of lard. The "Shield" brand is the best lard made by the Armour Company.

Every barrel of pork sent to Germany bears a certificate of microscopic inspection by the United States vouching for its wholesomeness. There is an oleomargarine department, and, as nearly as I can learn, the product is made in the following way: The sweet fat of the steer is cooked, strained, grained, and settled. This pure oil is then combined with a given amount of the finest leaf lard, a certain amount of cream, milk, or butter is then added, according to the grade intended to be made, and the whole churned, and marked as ordinary butter.

The pails or tubs containing the oleomargarine are labeled as ordered by the Government, in order not to deceive the buyer. It is not claimed that oleomargarine is as good as the best of butter; it is cheaper, entirely wholesome, and better than poor butter.

Since the establishment of the Armour Company in 1865 there has been a market for fat cattle, sheep, and hogs, though not always at prices to suit the seller.

THE HIGHER EDUCATION OF WOMEN IN SWITZERLAND.

BY ARNOLD EMCH.

To judge from frequent erroneous statements and comparisons made by the educational press about co-education in European countries, there must be more misapprehension upon this point than almost any other. The opinion seems to prevail that women are debared by law as well as by custom from all higher professional, technical, scientific, and philosophical education. A few facts culled from a pamphlet, *Das Schweizerische Schulsystem* (The Swiss School System), prepared by the Swiss Department of the Interior and distributed at the Columbian Exposition at Chicago, may be welcome to many, because they give the official statistics concerning the status of co-education.

In the common schools of Switzerland both sexes are educated together, and neither enjoy any privileges except that the girls receive from three to six hours per week of additional obligatory instruction in women's handwork. Of the teachers of the common schools, only 32.3 per cent are women. The reason for this must be sought in the fact that it does not pay the Government to give young women the professional education which a Swiss teacher must have. Experience has shown that the average time women teachers remain in the ranks of the profession is less than four years.

With intermediate schools of Switzerland are classed the county and city high schools, gymnasia, normal schools, industrial and agricultural schools, and theological seminaries. In nearly all of these the young women are admitted on an equality with the young men, except, of course, the theological seminaries. Of county and city high schools (*Secundarschulen*), there are 477, with an attendance of 28,537 pupils, and a teaching force of 1370 teachers. Of the pupils, 16,346 are boys and 12,191 girls, and of the teachers 1178 are gentlemen and 192 ladies.

The normal schools are usually, though not always, connected with the gymnasia, of which there are over forty in the Republic. In these institutions the sexes are not co-educated. In many cantons there are two gymnasia of similar standing, one for the young men, and one for the young women, and in some cities the high schools are also organized on the plan of separation. The gymnasia for the girls are called *Höhere Töchterschulen*, and there are about a dozen of these. Efforts are being made at present to secure admission for women to the gymnasia for male students, and if successful this step would undoubtedly be the greatest taken in the direction of co-education, for the gymnasia—there are no parallel schools in the American system of education—are the institutions that have made possible the great universities and polytechnic schools. They give a six years course in modern and ancient languages, higher mathematics, pure science, drawing, history, etc.,

that is fully equal to the usual classical course of the common grade of American universities, thus enabling the universities and polytechnic schools to devote themselves entirely to scientific or professional post-graduate work. No student can enter the latter without having passed the former. The gymnasia are usually divided into three or four schools: one of science and mathematics (*Realabteilung*), one of classics and humanities, one of modern languages and technical science, and one of pedagogics. In Switzerland, last year, these gymnasia gave instruction to 17,299 students, of whom only about 4,500 were women. This number, one-fourth of the whole attendance, ought to be much larger, and the admittance of the young women to all the gymnasia would undoubtedly increase it considerably, yet the fact remains that only few women attend the upper classes in the *Töchterschulen*, showing that the facilities for higher instruction are not generally appreciated by the sex.

It is difficult to give the reasons for this condition of things, but a main point is undoubtedly in the fact that a thorough education does not end with these six long years. In order to compete with the men in the learned professions, the young women must yet pass the university or polytechnic school, where an indefinite course of from two to four years awaits her. For obvious reasons, few women have the courage to devote from eight to ten years of their bloomiest youth to an intellectual price, no matter how grand. The statistics for 1891 show an attendance of women at the four universities, five academies, and one polytechnic institute of Switzerland of only 226 regular students and a few auditors, while the same statistics give the attendance of men at 2847.

There is no difference in academic duties and privileges between the sexes at any of these institutions, though women were not admitted as regular students previous to 1865. Zurich was really the first university in Europe which risked this last step in the co-education of the sexes, while Goettingen and Heidelberg did not grant the admission of women until last year. The attendance of women at the Swiss universities is so small, when compared with that of men, that it is still an unusual phenomenon to see a woman in some of the class-rooms (*Hoersaal*), and it will probably take a decade or two to entirely remove the prejudice still existing in many well-educated circles.

Only one of the several institutions of university rank has had the courage to engage women teachers, though every medical faculty possesses women assistants. The University of Zurich has had several women professors, and employs at present Dr. Emilie Kempin to expound American and Roman civil law.

It will be seen that the emancipation of the weaker sex, as far as educational privileges are concerned, is nearly complete. Central Europe, as well as America, has conceded that there should be no difference of rights, but whether it is desirable that women should subject themselves in large numbers to the severe mental work of extended higher training, is a question yet to be solved.

Expensive Cruelty to Animals.

That cruelty to dumb animals assumes many forms the yearly report of the Massachusetts Society for Prevention of Cruelty to Animals assures us. The frequency with which the farmers figure in the pages of the report struck us. This cruelty is made expensive, as is instanced by the case of a farmer who paid \$20 for beating a cow. Another was fined \$25 for failing to shelter two calves belonging to him. Two others who left stock out in the storm until they were covered with ice, were fined \$12 each for their brutal folly. Still another paid a like fine for neglecting to feed his fowls. Two other farmers paid respectively \$25 and \$30 for starving their cows. A third farmer for a like offense was imprisoned for two months. Still another who starved his oxen was fined \$20 for his criminal stinginess. Another who fed his horses and cows mainly on refuse apple pomace paid a fine of \$50 to avoid imprisonment.

The list grows long, but the end is not yet, for a farmer paid a fine for abandoning a sick cow by the road side. Another brutal farmer fired a charge of shot into a cow to persuade her to go in a barn and paid \$50 to remind him of an easier way. Another chopped off the tail of his cow because she switched her tail in his face; \$15 for his brutality. Still another was fined \$100 for maliciously mutilating his neighbor's cow with a knife. The list is not exhausted, but we have called enough examples to show that the human brute should never be charged with the care of the animal one.

The only objection we have to the punishment imposed in each case is its insufficiency. Men capable of such brutality as this report indicates these farmers committed should not be permitted to escape with paying a fine. Confinement with hard labor should accompany a money loss in every such instance. We are unable to understand the impulses of such wanton cruelty. Men so low in the scale of humanity as to be guilty of wilfully injuring useful farm animals should receive no mercy. They deserve none. Their punishment should be swift, stern, and severe.—*Live-Stock Indicator*.

A Plea for the Forests.

It appears strange to me that more men and women are not pleading for the preservation of our natural forests. The agricultural press, too, which is usually farsighted in matters which are likely to effect the interest of farmers, has as yet made little or no effort to call public attention to the ruinous destruction, and too often needless waste of our timber resources. Many persons entertain the idea that the timber supply of some of the Southern, Northern, and Pacific States is inexhaustible; that these States may continue to supply the remaining portions of our vast country with lumber for many decades to come. Such have only to study the facts in the case to find how mistaken they are.

Statistics show us that the United States to-day has a forest area of but little over four hundred million acres. Written in figures (400,000,000), the area will appear large to many eyes, but when we ascertain from the same source that about 250,000,000 feet of lumber are required for annual consumption, and that 10,000,000 acres, on an average, are burned over by forest fires every year, the future supply becomes more doubtful, and the question of needless destruction becomes vastly more serious.

Should forest fires be prevented in the future, which is scarcely probable, the present demand on forests for timber supply would require that 400,000,000 acres should be kept perpetually in well-timbered forests to provide the necessary amount for annual use. So it would appear that it is already too late to begin to agitate the question of forest preservation. But Americans are naturally greedy, and everyone who owns a few acres of timber seems anxious to sell at least a portion of it, more likely all, appropriate the money to extending his business operations, never once dreaming that future generations would like to know what a forest looked like, and are likely to require some timber for mechanical purposes.

The great State of Ohio, originally one vast forest area, had in 1853, 14,000,000 acres of forests. Since then most farmers should have maintained this forest area, though in some localities, notably in the north-western counties, new farms are to be cleared up. But in these forty years eleven million acres of forest have disappeared, not from new counties alone, but from many old farms that could ill afford the timber. Though we still have a little over three million acres of woodland, there are few acres of real forest if anything like primeval condition. The timber in many cases has been culled over, and in most instances the woodland is devoted to pasture for sheep or cattle, which results in the destruction of all new growth.

Horace Greeley, who was traveling in Europe, wrote thus on the 6th of May, 1851: "Friends at home—I charge you to spare, preserve, and cherish some portions of your primitive forests; for when those are cut away I apprehend they will not easily be replaced. A second growth of trees is better than none; but it can never equal the unconscious magnificence and stately grace of the red man's hunting grounds." This far-seeing philanthropist saw in that early day what many fail to see at the present time.

Drs. Warder and Peaslee, Prof. Adolph Leue, Hon. Leo. Weltz, and others have done much to encourage forest preservation, but to-day the interest lags and the forests are going—all but gone.

Some years ago the government of Bavaria sent to this country an expert forester to study the various kinds of timbers of the United States, their habits of growth, and the conditions of soil, climate, and humidity necessary to their growths. When inquiry was made as to the nature of his mission and the benefits to be derived from it, he replied: "In fifty years you will have to import your timber, and as you will probably have a preference for American kinds, we shall now begin to grow them, in order to be ready to send them to you at the proper time."

Should forest depletion continue through the next fifty years at the rate it did through the past fifty, we should probably be compelled to import far more articles of food than at present, if any one may judge from the history of Palestine, Arabia, Sicily, Media, Persia, Spain, and portions of other European countries which were first robbed of their forests and then of the fertility of the soils.

Bryant, in one of his poems so true to nature, makes the Indian say:—

The realms our tribes were crushed to get,
May be a barren desert yet.

And is it not true that our long-protracted annual drouths are to a great extent due to the very facts of which the poet meditated?

Secretary L. N. Bonham says, in 1884: "The crops of twenty-two to twenty-seven bushels of wheat last season in fields protected by timber, and crops of two to ten bushels in fields of equal fertility, but not protected against the winds, tell the story of our need." While heavy crops of wheat are sometimes produced on exposed fields, I believe that the soil of such fields will always be found to contain from thirty to fifty per cent more vegetable mold than protected fields giving equal yields, or that difference has been supplied by the farmer in the form of fertilizers.

I believe the government should take steps to encourage the re-establishment of forests in many regions where the land is ill adapted to other purposes.

In many hilly, rocky, or mountainous sections forestry might be made profitable as an industry, while at the same time the increased forest area would be highly beneficial to the farmer and fruit grower. It would seem that while we have the founder of "arbor day" at the head of the agricultural department of our government would be an appropriate time to agitate the question.—*John L. Sawyer, in Farm and Fireside*.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.

Winter Term—January 9th to March 30th.

Spring Term—April 2nd to June 13th.

June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

The Blue River and Wildcat Creek have afforded good skating for several days past.

Work will soon be resumed on Science Hall if the weather moderates as it now promises.

The Kitchen Laboratory was tested to its utmost capacity yesterday to supply about 175 lunches.

The costumes for the play to be presented at the Hamilton Society Exhibition are in preparation.

Lieut. E. A. Helmick has been detailed Professor of Military Science and Tactics at Hillsdale (Mich.) College.

At the last meeting of the State Historical Society Prof. Walters was elected Director for a term of three years.

The Library has received a donation of about thirty volumes of State publications from the State Librarian of Pennsylvania.

Mrs. Willard Elliot of Manhattan piloted her sister, Miss McNair, a teacher of Topeka, through the various College departments yesterday forenoon.

Mr. and Mrs. Kendrick, of Denver, spend a few days with Prof. and Mrs. Olin, on their way to Ohio. They were both schoolmates of Mrs. Olin in Ohio.

Misses Bertha and Edna Crissmen from the southern part of the State, guests of Mr. and Mrs. A. E. Deputy of this city, visited classes at College on Tuesday.

The *Orphan's Home*, of Leavenworth, republishes the article on "Influence of Bad Juvenile Literature," written by Miss Rupp for a recent number of the INDUSTRIALIST.

A Farmers' Institute at Lakin, this week, is aided by Prof. Georgeson and Secy. Graham in presentation of the topics, "Stock Feeding" and "Diversified Farming for Western Kansas."

Nicholson's Gardener's Dictionary, in four volumes, is just received by the Library for the Horticultural Department. The Botanical Department has a set of this valuable work, and a third one is needed for the general library.

Mrs. J. G. McKeen and daughter, Edna, of College Hill, Mrs. Smith and Mrs. W. E. Thackrey, of Manhattan, Miss Louisa Bland of Kansas City, Mo., and Miss Rachel Milner, of Topeka, were among the visitors at the Chapel exercises yesterday afternoon.

The enrollment to date is not far below that of last year, a very considerable addition having been made this term. The total is 562, classified as follows: Post-graduate, resident and non resident, 30; Fourth-year, 43; Third-year, 74; Second-year, 127; First-year, 245; in special classes, 73.

The Drawing Department has received by courtesy of the Hydraulic Pressed Brick Works of Kansas City and St. Louis about thirty-five specimens of ornamental pressed brick, among them some of glazed face, now so extensively used in ornamental interiors. The bricks will be used for illustration in class.

Regent Street is no longer an editor, having sold his paper, the *Oberlin Herald*, to devote his time to his fine farm just outside of the town. Mr. Street is one of the progressive farmers of the northwestern part of the State, and as such knows that he cannot do justice to both the farm and the newspaper.

The usual joint meeting of Regents and Faculty of the term was held Tuesday evening, and, as is customary on such occasions, the Cooking Class, under the direction of Mrs. Kedzie, served dinner. Both the cooking and the serving attest the proficiency of the young ladies in the respective duties assigned them. Misses Haines, Waters, Stokes, and Cottrell, post-graduates, presided at the tables.

The intense cold of Tuesday, Wednesday, and Thursday caused much discomfort in class-rooms, in some of which the steam-pipes were frozen to bursting. The coils in the Botany class-room suffered most, making it necessary to order new pipe before the damage can be repaired. The mercury fell to -14° Tuesday night, and ice varying in thickness from seven to twelve inches formed. A bountiful harvest should be reaped.

The following letter to Pres. Fairchild from Mr. B. F. Galloway, Chief of the Division of Vegetable Pathology, United States Department of Agriculture explains itself: "For some time I have been watching with interest the work of Mr. Carleton, a member of your staff. Believing that we might perhaps afford him a wider field for useful labor, I have offered Mr. Carleton a place here, and he has accepted. I hope in taking this step we shall not inconvenience you, and that the College will continue to give to the world such good men as Mr. Swingle, Mr. Carleton, and

Mr. Fairchild." Mr. Carleton leaves for Washington next month. He will take with him the good wishes of a host of friends, and it is more than probable that in his new work—the investigation of grain rusts—he will do much to advance the cause of agriculture.

The Chapel exercises Friday afternoon by the Fifth Division of the Fourth-year Class was as follows: J. U. Secrest, "Life on a Ranch;" Sadie Moore, "A Moral Crusade;" J. Stingley, "Use of the Imagination;" Jennie R. Smith, "Illustrations of Progress;" D. Timbers, "Two Centuries;" Phoebe Turner, "Making the Most of Life;" S. R. Vincent, "Opening of the Cherokee Strip;" Lucy Waters, "The Elements of Realism in Literature;" W. O. Staver, "Religion or Morality;" J. M. Williams, "Should Religious Instruction be given in Public Schools?"

GRADUATES AND FORMER STUDENTS.

Sam Kimble, '73, has been appointed receiver of the estate of W. P. Higinbotham, vice Orville Huntress, deceased.

E. O. Sisson, '86, is principal of the Southside School, 5442 Drexel Avenue, Chicago. He reports a recent revival of interest in the college course by a visit to his brother, Dr. S. Sisson a former student, and Mrs. Kate Oldham-Sisson, '92, who are now living in Toronto, Canada.

Mr. John Overfield, of Independence, who is traveling for a queensware house, was in Sedan Monday. He was a college chum of Mr. G. V. Johnson, '91, of this office, at the State Agricultural College away back in the 80's. The boys hadn't met before since they left College, and they had a small picnic.—*Sedan Times*.

Of former students who by their presence at the rhetorical exercises yesterday afternoon showed their continued interest in the work of the College, were noticed the following: Flora E. Livings, First-year in 1892-3; Hattie E. Yenawine, Second-year in 1891-2; Lulu P. Berkshire, First-year in 1893; B. A. Knox, student in 1891-2; Elizabeth Stingley, Second-year in 1891-2.

Board Meeting.

The Regents were in session from Tuesday afternoon till Thursday evening, all being present. Tuesday evening was given to the joint session of the Regents and Faculty, with statements of the work going forward, and the needs of the several departments. Hon. W. R. Hopkins of Garden City was given a hearing on Wednesday morning, with reference to irrigation experiments in the western part of the State.

Action was taken providing for experiments in irrigation at two points, one in Finney County, and one in Decatur County, with an appropriation of \$600 for the current quarter, to begin operations. Regent Kelley was appointed a committee to select a proper location in Finney County, and Regent Street was given the same authority in Decatur County. The Station Council is to have the same relation to these experiments as to others.

The quarterly estimates for expenditures in the Station was approved, and authority was granted for the construction of shelving in the Drawing Department, at an estimated expense of \$35; for repairs on microscope and a drawing-board in the Botanical Department, \$10; for necessary utensils in the Kitchen Department, \$10; for trees and shrubs in the Horticultural Department, \$20. Prof. Georgeson was authorized to exchange the Shorthorn bull, "Craven Knight," for a younger bull from the herd of Col. Harris, of Linwood, "Golden Knight." Dr. Mayo was authorized to undertake, in consultation with the State Veterinarian, a tuberculin test upon five animals of the College herd.

The following resolution was adopted:—

"Whereas, the lectures in the economic course have not been well attended by students,

"Resolved, That the course be discontinued for the present, with a view to establishing, at some future time, a lectureship on economic topics."

The Faculty were authorized to make such use of the exhibit returned from Chicago as will be most satisfactory in the several departments.

The Faculty were requested to present at the April meeting of the Board a scheme for requiring military drill in the first and second years of the course, with a view to its adoption for the ensuing year.

In view of the fact that before the next regular meeting of the Board the commissions of Regent Forsyth and Wheeler will expire by limitation, the following resolutions, offered by Regent Secrest, were unanimously adopted:—

"Resolved, that we contemplate with feelings of deep regret the departure of our two senior Regents, and their vacant chairs for so many years ably and punctually filled in the discharge of duty.

"We shall miss their guidance and counsel made valuable by long years of experience along the lines of official work; together with their friendly and gentlemanly bearing toward the junior members. We thank Regent Forsyth for his impartial and uniformly courteous ruling as presiding officer, and Regent Wheeler for his conscientious custody of the College funds. In extending them our parting hand, we fully realize that we have lost two honest, efficient collaborators, and the Kansas State Agricultural College two of its best and truest friends and guardians. And while we shall ever cherish their memory and imitate their virtues, the institution of learning over which they were placed as honored trustees will ever be ready as a living and proud witness to testify to their sterling worth and disinterested devotion.

"Resolved, that a page of the records of the minutes of the Board be set aside for the insertion of this resolution."

Short Course in Agriculture.

The Kansas State Agricultural College invites attention to a short course of lectures on practical topics pertaining to agriculture, horticulture, stock raising, dairy, veterinary science, farm architecture, farm accounts, etc., which will be given free to all persons interested. The course will commence on Tuesday, February 6th, at 10:30 o'clock A. M. and continue daily, including Saturday forenoon, February 10th, until Saturday noon, February 17th. It is intended to give three lectures per day: at 10:30 A. M., 1:30 P. M., and at 3 P. M. Each lecture will be followed by a general discussion of the facts presented, in which all are expected to participate. The following is a list of the subjects to be presented:—

TUESDAY, 6.

Speculation in Farming.....Pres. Fairchild
Geology of Soils.....Prof. Fairlyer
Principles of Economic Entomology.....Prof. Popenoe

WEDNESDAY, 7.

Maintaining the Fertility of the Farm.....Prof. Georgeson
How Plants Live.....Prof. Hitchcock
Cultivation of Orchard Fruits.....Prof. Mason
The Swine Industry.....Judge W. B. Sutton

THURSDAY, 8.

Lameness.....Dr. Mayo
Birds and the Farmer.....Prof. Lantz
Home Grounds and Farm Buildings.....Prof. Walters

FRIDAY, 9.

Lightning Conductors.....Prof. Nichols
History and Description of Prominent Breeds of Cattle.....Prof. Georgeson
The Dairy Interest.....J. E. Nissley
The People and the Currency.....Hon. A. J. Felt

SATURDAY, 10.

Nitrogen in Agriculture.....Prof. Fairlyer
Motors for the Farm.....Prof. Hood

MONDAY, 12.

Veterinary Obstetrics.....Dr. Mayo
Fermentation and some of its Relations to Agriculture.....Prof. Willard
Treatment of Plant Diseases.....Prof. Hitchcock

TUESDAY, 13.

Stockbreeding—Laws of Heredity.....Prof. Georgeson
Farm Insects.....Prof. Popenoe
The Family as a Factor in Farming.....Pres. Fairchild
Initiative and Referendum.....Prof. Walters

WEDNESDAY, 14.

Preservation and Preparation of Foods.....Mrs. Kedzie
The Farm Garden.....Prof. Mason
The Impurities in Water.....Prof. Fairlyer
(Topic to be announced).....Hon. David Overmeyer

THURSDAY, 15.

The Irrigation Question.....E. B. Cowgill
Horse-breeding as a Component of General Farming.....F. H. Avery ('87)
Insects of Orchard and Garden.....Prof. Popenoe
Corporations, Monopolies, Trusts.....Prof. White

FRIDAY, 16.

Stock-feeding.....Prof. Georgeson
Wheat Rust.....Prof. Hitchcock
Poultry as a Farm Industry.....Hon. Jno. C. Snyder
Dehorning vs. Horning.....Hon. F. D. Coburn

SATURDAY, 17.

Colic in Horses.....Dr. Mayo
Farm Accounts.....Secy. Graham

The Military Department.

A recent paragraph in the *Students' Journal* of Lawrence, stating that the College authorities were more than willing to be relieved of the Military Department, and that removal to the University would be in order, was evidently written under mistaken notions of the facts. The Military Department is provided for in the Act of Congress granting lands for endowment of the College, in the organic act locating the College and endowing it with the lands granted, and in the law providing for detail of officers and professors of military science and tactics. The Board of Regents and the Faculty have fully recognized the Department in seeking equipment and facilities for instruction in keeping with its importance. In the past drill has been optional in the course simply because it was thought that better results were secured in this way. Lieut. Todd, who held the chair of Military Science from 1880 to 1884, believes this plan to be the best. Lieut. Morrison, in the same chair from 1887 to 1890, expressed a preference for the plan as securing a stronger interest and greater progress than compulsory drill could furnish, while more than ninety per cent of male students took drill at some time in their course. Of late, perhaps, other interests have diminished the attention of students and the increasing number of classes has crowded upon the time devoted to drill for want of room at other hours; but with the new building relieving the pressure for rooms, the Board will find place for larger opportunities in drill, and may give it a place among the requirements of the regular course. Its usefulness to students in promoting a manly bearing and gait, a ready command of person, a prompt execution of purpose, a healthful exercise, and genuine recreation, while it makes them better prepared for true citizenship in defence of liberty and order, must be recognized by everybody. The State Agricultural College has no disposition to forego these advantages for its students. At the same time we shall gladly greet the news when a similar department finds a place in the State University, for which ample provision is made in the laws of the United States, if the authorities in charge desire such an addition. Will newspapers which have published the paragraph referred to be kind enough to publish this statement for the benefit of all concerned?

COLLEGE ORGANIZATIONS.

January 19th.

If the lively interest in Society continues, this term promises to be one of unusual profit and pleasure to the A. B.'s. Music, a trio—"The Reapers," by Misses Inez and Elva Palmer and Jennie Smith, opened the session, and was followed by devotion. The new officers being installed, Pres. Christensen before leaving the chair responded to the call for a valedictory, by thanking the members of the Society for their sincere co-operation in the work of the Fall term, and commending their discretion in their choice of a new President.

The inaugural of Pres. Smith was full of patriotic devotion to Society and caused its members to congratulate themselves that one of their number was so worthy to occupy this place of honor. The literary part of the programme was introduced by a declamation rendered by R. W. Clothier in his energetic and interesting delivery. Though character is a broad subject, Lulu Jackson in a short essay showed its practical relation to every-day life. J. F. Odle and M. A. Limbocker, affirmative, against Sarah Cottrell and T. L. Jones, argued the question, "Resolved, that each member of the Faculty should take part in the Chapel by the pursuance of some subject they deem proper," these short talks to occupy the time between morning devotion and the first hour. Each side respectively expanded on the instructiveness and dryness of such talks, the negative believing that if a desire for such instruction really existed among the students it would be manifested by attending the Scientific Club. The judges two to one believed that the students would profit by such a variation in the morning programme. The Gleaner by Laura Clemons was followed by the social part of the programme, recess. The guitar duet by Con Buck and Nora Fryhofer, a new feature in Society's music, was encored. C. C. Smith talked informally on the new building, saying the Alpha Beta Society, because of its age, and he believed its standing also, should have the choice of rooms in Science Hall. Dangerous fads, particularly burlesques and parodies on religion, were forcibly denounced by Gertrude Havens. Mrs. E. Shellenbaum, a student of the State Normal last year, entertained the Society by a comparison with the Agricultural College. "Beautiful Dreams," a mixed quartette by Sarah Cottrell and Lorena Clemons, and W. Harling and J. F. Odle, enlivened the business part of the session. It being late, the Society adjourned before the completion of the programme.

G. W. F.

January 20th.

The Webster Society was called to order by President Ames. Following roll-call, J. B. Dorman led in devotion. After reading the minutes of last meeting, the officers elect, with the exception of Board of Directors, were initiated. R. W. Ashbrook, G. Evans, W. S. Hiestand, and H. M. Sharp were received as members of the Society. The question, "Resolved, that the works of art are more pleasing to the eye than those of nature," was discussed affirmatively by C. W. Pape and R. P. Newman, negatively by Geo. Forsyth and M. Wheeler. Some of the principal arguments were as follows: Affirmative—Art gives the finishing touch to nature; paintings an improvement on nature, as the evidence of critics; rugged scenes on canvas as rugged scenes of nature; art employed for selfish ends. Negative—Paintings cannot represent life-likeness of the original; the greatest artists follow nature most closely; the solar system as works of nature; wildness of nature makes it attractive. Decision of the Society was given in favor of the negative. J. B. Dorman then read an essay, which was followed with declamation delivered by W. Morse, entitled "Wm. Tell." Both the essay and the declamation were somewhat of a humorous nature and well appreciated. After a recess of ten minutes, Chase Cole, with the assistance of the Webster Glee Club, furnished the Society with music, the appreciation of which was shown by an encore. C. H. Stokely then delivered a declamation, "Benefits of Reading." E. R. Farwell discussed the "Silk Worm" from egg to egg. Following a lengthy edition of the "Reporter" by S. R. Vincent, B. W. Conrad of Hamp-town furnished the Society with guitar music. As the election of the Board of Directors had been declared unconstitutional, a new Board composed of the following members was elected: C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. The new critic was called upon for his report, and demonstrated his ability to hold down the chair.

F. E. U.

January 19th.

The Ionian Society was called to order by President Lyman, at the usual time. Opened by congregational singing and led in devotion by Phoebe Turner, after which an unusually large number of members responded to roll call. The insufficient seating capacity of the hall again suggested the need of our new room, now in progress, to properly accommodate the many friends and guests who were present. The officers elected for this term were installed, and took their respective places, with the exception of the Recording Secretary, who has left College since her election. Misses Cora Atwell, Ada Zimmerman, Gertie Lyman, Juanna Freeman, Myrtle Chellas, Cora and Gertrude Stump, then became members of the Society. Olive Long opened a good program by reciting "The Inventor's Wife." An edition of the Oracle, having "Push on; keep moving," for its motto, was presented by Flora Day, in the absence of the editor, Mabel Selby. "Which is more influential, conversation or letter writing?" was the subject of a lively and interesting discussion, opened by Blanche Hayes, who was followed by Belle Frisbie and Ethel Patten, most of whom presented the "conversation side of the question." The invitation to our visitors to take part, was responded to by Messrs. Patten, Cavanaugh, Dougherty, and Stingley, one or two expressing their preference for letter writing. The next was a well-rendered vocal solo, "Two little girls in blue," by Rena Helder, with Hilda Leicester at the piano. The hearty encore was responded to by a piano solo. Belle Frisbie gave a reading on "The Family of the Lambs." Messrs. Keele and Lyman then rendered a guitar duet, which was highly appreciated by the Society, as was shown in their hearty encore, to which Mr. Keele responded by whistling and accompanying himself on the guitar in his entertaining manner, and was again encored, and again responded to the great pleasure of the audience. An interesting and well-prepared book review was next given of "The Tale of Two

Cities," by Phoebe Turner. The program was closed by Messrs. Keele and Lyman kindly playing two more duets. The Society business was transacted in a very energetic and interesting manner; and the late hour necessitated adjournment before all was completed.

M. A. C.

January 20th.

The Hamilton Society was called to order promptly at 7:30 o'clock by President Staver. Roll call showed that promptness was certainly one of the resolutions for the new year. Prayer, E. L. Frowe. After inauguration of officers, the Society listened to an eloquent valedictory address, which was followed by an inaugural by President Hutchings. Marshal Hoge administered the oath of membership to Henry Moore, Wm. Poole, A. W. Staver, and W. Anderson, who were heartily welcomed as members of the Society. The programme of the evening was opened with an amusing declamation by G. W. Finley. H. D. Brown read a very instructive essay on "glass." A. C. Smith in his first appearance before Society delivered an entertaining declamation in a manner that distinguished his ability as a speaker. George Doll's oration, entitled "In the Midst of Boasted Prosperity," was delivered in a manner that would have done credit to a statesman. The life of Thomas Payne, as read by Frank Yeoman, was an interesting and well-read selection. Mr. Kellogg's essay on "The exploration of a cave in the Blue Hills of Russell County," was instructive as well as amusing. An interesting debate was next taken up, the question being, "Are the objects of this country, as stated in the preamble of the constitution, in more danger from within her borders than from without?" C. F. Doan argued the affirmative by citing us to Rome and Greece, which countries fell from the evils within their own borders. He stated that the greatest evil we have to fear at the present time is the increasing secret orders which are gradually growing into anarchy and rebellion. C. W. Brobst rebutted the argument of the affirmative by claiming that we are too far advanced in civilization to be likened to the old countries who have overthrown themselves by evils within their own borders. G. C. Hall, in defending the affirmative, claimed that the worst man we have ever had originated within our own borders, and that in the present discontent indicated another. O. Bentz claimed that our citizens were too well educated in this day and age of the world to ever think of revolting against each other. The Society decided in favor of the negative. After a recess of seven minutes, the Society was unusually well entertained by a vocal solo and guitar accompaniment by B. W. Conrad, and showed their appreciation of his efforts by a hearty encore, to which he responded. E. C. Joss gave the Society a choice selection of the latest news. After disposing of an unusual amount of unfinished and new business, the Society adjourned at 10:50.

A. P. C.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Martin Van Buren Stevens, age 90, has been enrolled in the law department of the State University. Better late than never!

The *Youth's Companion* utters the following sentiment about football: "In its present form the game is brutal, and in its brutality can be classed only with prize-fighting."

President W. M. Beardshear, of Iowa Agricultural College, Ames, is one of the lecturers in the course of Lane University at Leocompton. He will lecture some time in March.

Some of the eastern colleges are after different members of the State University Faculty. What's the matter with trading one of the musty old "Profs" for a first-class foot-ball coach?—*Florence Bulletin*.

Five members of the Baker football team will graduate from the theological department of the University and go into the ministry next June. Their salaries will not get behind; they are too good kickers to allow that. Maybe that is why the other Methodists are objecting to football in Baker.—*Kansas City Star*.

A lecture course has been arranged for at Cottonwood Falls for the purpose of raising money for the High School library. The programme includes the names of Chancellor Snow and Profs. Carruth and Stevens of the State University, President Taylor of the State Normal School, and President Fairchild and Prof. Olin of the State Agricultural College.

At a meeting of the Western Inter-state Foot-ball Association in Kansas City, Saturday, the 30th, the following games were scheduled for '94: Kansas vs. Iowa, at Iowa City, Nov. 13; Missouri vs. Nebraska, at Lawrence Nov. 17; Missouri vs. Iowa, at Columbia, Nov. 17; Kansas vs. Missouri, Kansas City, and Iowa vs. Nebraska, at Omaha, Thanksgiving Day.—*State University Journal*.

Thirteen school districts of Lyon county, through which the Santa Fe passes, will be obliged to close their schools on account of the refusal of that road to pay its taxes, amounting to \$14,000 for the county. The Emporia schools will also be greatly affected, but will continue to run on a narrow margin until the case is settled in the courts. It is estimated that four hundred districts in the State will have to close or reduce their school term for the same reason.

This Winter the State Music Teachers' Association held its annual meeting at Lindsborg. Independence, Westmoreland, Marion, Emporia, Salina, McPherson, Lawrence, Kansas City, and Lindsborg were represented. The former officers were re-elected. Prof. Penny read a paper, "What the Critic and the Public Demand of the Musician." A Spring meeting will be held in Topeka or Emporia. The holding of musical festivals for the benefit of the public will then be discussed.

Expenses.

Tuition is free, and no general fee for incidental or contingent expenses is charged.

Lessons in instrumental music—two a week—are from \$10 to \$14 a term, according to its length; one a week, \$6 to \$8.40. In classes of two or more, the cost is less. One-half is to be paid to the instructor in charge with the first lesson; the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$2.75 a term; for the second year, \$3 a term; for the third year, \$6.50 a term; and for the fourth year, \$2.75 a term. Second-hand books may be obtained at lower prices.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$4.05; microscope for botany and entomology, \$1.50; case, pins, etc., for entomology, \$2.25; herbarium, \$1.50. The total expense for these articles during the four years is less than \$10.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.50 to \$3.50 per week, or table board in student clubs from \$1.50 to \$2.25 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOTSMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.